

August 04, 2017

**Report to:**

Trevor Mueller  
Stewart Environmental Consultants, Inc.  
2600 Canton Ct.  
Unit C  
Fort Collins, CO 80525

**Bill to:**

Accounts Payable  
Stewart Environmental Consultants, Inc.  
2600 Canton Ct.  
Unit C  
Fort Collins, CO 80525

cc: Trevor Mueller

**Project ID:**

ACZ Project ID: L38583

**Trevor Mueller:**

Enclosed are the analytical results for sample(s) submitted to ACZ Laboratories, Inc. (ACZ) on July 20, 2017. This project has been assigned to ACZ's project number, L38583. Please reference this number in all future inquiries.

All analyses were performed according to ACZ's Quality Assurance Plan. The enclosed results relate only to the samples received under L38583. Each section of this report has been reviewed and approved by the appropriate Laboratory Supervisor, or a qualified substitute.

Except as noted, the test results for the methods and parameters listed on ACZ's current NELAC certificate letter (#ACZ) meet all requirements of NELAC.

This report shall be used or copied only in its entirety. ACZ is not responsible for the consequences arising from the use of a partial report.

All samples and sub-samples associated with this project will be disposed of after September 03, 2017. If the samples are determined to be hazardous, additional charges apply for disposal (typically \$11/sample). If you would like the samples to be held longer than ACZ's stated policy or to be returned, please contact your Project Manager or Customer Service Representative for further details and associated costs. ACZ retains analytical raw data reports for ten years.

If you have any questions or other needs, please contact your Project Manager.



Sue Webber has reviewed and  
approved this report.



**Stewart Environmental Consultants, Inc.**

Project ID:

Sample ID: MW-12

ACZ Sample ID: **L38583-01**

Date Sampled: 07/19/17 13:00

Date Received: 07/20/17

Sample Matrix: Waste Water

## Wet Chemistry

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Carbon, total organic (TOC)	SM5310B	1	63.3		*	mg/L	1	5	08/01/17 11:00	bce

Arizona license number: AZ0102



**Report Header Explanations**

<i>Batch</i>	A distinct set of samples analyzed at a specific time
<i>Found</i>	Value of the QC Type of interest
<i>Limit</i>	Upper limit for RPD, in %.
<i>Lower</i>	Lower Recovery Limit, in % (except for LCSS, mg/Kg)
<i>MDL</i>	Method Detection Limit. Same as Minimum Reporting Limit unless omitted or equal to the PQL (see comment #5). Allows for instrument and annual fluctuations.
<i>PCN/SCN</i>	A number assigned to reagents/standards to trace to the manufacturer's certificate of analysis
<i>PQL</i>	Practical Quantitation Limit. Synonymous with the EPA term "minimum level".
<i>QC</i>	True Value of the Control Sample or the amount added to the Spike
<i>Rec</i>	Recovered amount of the true value or spike added, in % (except for LCSS, mg/Kg)
<i>RPD</i>	Relative Percent Difference, calculation used for Duplicate QC Types
<i>Upper</i>	Upper Recovery Limit, in % (except for LCSS, mg/Kg)
<i>Sample</i>	Value of the Sample of interest

**QC Sample Types**

<i>AS</i>	Analytical Spike (Post Digestion)	<i>LCSWD</i>	Laboratory Control Sample - Water Duplicate
<i>ASD</i>	Analytical Spike (Post Digestion) Duplicate	<i>LFB</i>	Laboratory Fortified Blank
<i>CCB</i>	Continuing Calibration Blank	<i>LFM</i>	Laboratory Fortified Matrix
<i>CCV</i>	Continuing Calibration Verification standard	<i>LFMD</i>	Laboratory Fortified Matrix Duplicate
<i>DUP</i>	Sample Duplicate	<i>LRB</i>	Laboratory Reagent Blank
<i>ICB</i>	Initial Calibration Blank	<i>MS</i>	Matrix Spike
<i>ICV</i>	Initial Calibration Verification standard	<i>MSD</i>	Matrix Spike Duplicate
<i>ICSAB</i>	Inter-element Correction Standard - A plus B solutions	<i>PBS</i>	Prep Blank - Soil
<i>LCSS</i>	Laboratory Control Sample - Soil	<i>PBW</i>	Prep Blank - Water
<i>LCSSD</i>	Laboratory Control Sample - Soil Duplicate	<i>PQV</i>	Practical Quantitation Verification standard
<i>LCSW</i>	Laboratory Control Sample - Water	<i>SDL</i>	Serial Dilution

**QC Sample Type Explanations**

Blanks	Verifies that there is no or minimal contamination in the prep method or calibration procedure.
Control Samples	Verifies the accuracy of the method, including the prep procedure.
Duplicates	Verifies the precision of the instrument and/or method.
Spikes/Fortified Matrix	Determines sample matrix interferences, if any.
Standard	Verifies the validity of the calibration.

**ACZ Qualifiers (Qual)**

<i>B</i>	Analyte concentration detected at a value between MDL and PQL. The associated value is an estimated quantity.
<i>H</i>	Analysis exceeded method hold time. pH is a field test with an immediate hold time.
<i>L</i>	Target analyte response was below the laboratory defined negative threshold.
<i>U</i>	The material was analyzed for, but was not detected above the level of the associated value. The associated value is either the sample quantitation limit or the sample detection limit.

**Method References**

- (1) EPA 600/4-83-020. Methods for Chemical Analysis of Water and Wastes, March 1983.
- (2) EPA 600/R-93-100. Methods for the Determination of Inorganic Substances in Environmental Samples, August 1993.
- (3) EPA 600/R-94-111. Methods for the Determination of Metals in Environmental Samples - Supplement I, May 1994.
- (4) EPA SW-846. Test Methods for Evaluating Solid Waste.
- (5) Standard Methods for the Examination of Water and Wastewater.

**Comments**

- (1) QC results calculated from raw data. Results may vary slightly if the rounded values are used in the calculations.
- (2) Soil, Sludge, and Plant matrices for Inorganic analyses are reported on a dry weight basis.
- (3) Animal matrices for Inorganic analyses are reported on an "as received" basis.
- (4) An asterisk in the "XQ" column indicates there is an extended qualifier and/or certification qualifier associated with the result.
- (5) If the MDL equals the PQL or the MDL column is omitted, the PQL is the reporting limit.

For a complete list of ACZ's Extended Qualifiers, please click:

<http://www.acz.com/public/extquallist.pdf>

Stewart Environmental Consultants, Inc.

ACZ Project ID: **L38583**

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
L38583-01	NG427972	Carbon, total organic (TOC)	SM5310B	Q5	Sample received with inadequate chemical preservation. Additional preservation performed by the laboratory.
			SM5310B	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).

Stewart Environmental Consultants, Inc.

ACZ Project ID: **L38583**

No certification qualifiers associated with this analysis

Stewart Environmental Consultants, Inc.

ACZ Project ID: L38583

Date Received: 07/20/2017 11:33

Received By:

Date Printed: 7/20/2017

**Receipt Verification**

	YES	NO	NA
1) Is a foreign soil permit included for applicable samples?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
2) Is the Chain of Custody form or other directive shipping papers present?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3) Does this project require special handling procedures such as CLP protocol?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
4) Are any samples NRC licensable material?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
5) If samples are received past hold time, proceed with requested short hold time analyses?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6) Is the Chain of Custody form complete and accurate?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7) Were any changes made to the Chain of Custody form prior to ACZ receiving the samples?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

**Samples/Containers**

	YES	NO	NA
8) Are all containers intact and with no leaks?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9) Are all labels on containers and are they intact and legible?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
10) Do the sample labels and Chain of Custody form match for Sample ID, Date, and Time?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
11) For preserved bottle types, was the pH checked and within limits? <sup>1</sup> L38583-01 Container B1864786 (YELLOW GLASS): Added 8 mls sulfuric acid to the sub-sample to adjust the pH to the appropriate range.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
12) Is there sufficient sample volume to perform all requested work?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
13) Is the custody seal intact on all containers?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
14) Are samples that require zero headspace acceptable?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
15) Are all sample containers appropriate for analytical requirements?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
16) Is there an Hg-1631 trip blank present?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
17) Is there a VOA trip blank present?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
18) Were all samples received within hold time?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

**Chain of Custody Related Remarks**

**Client Contact Remarks**

**Shipping Containers**

Cooler Id	Temp (°C)	Temp Criteria (°C)	Rad (µR/Hr)	Custody Seal Intact?
4413	0.3	<=6.0	15	N/A

Was ice present in the shipment container(s)?

Yes - Wet ice was present in the shipment container(s).

Client must contact an ACZ Project Manager if analysis should not proceed for samples received outside of their thermal preservation acceptance criteria.

**Stewart Environmental Consultants, Inc.**

ACZ Project ID: L38583

Date Received: 07/20/2017 11:33

Received By:

Date Printed: 7/20/2017

<sup>1</sup> The preservation of the following bottle types is not checked at sample receipt: Orange (oil and grease), Purple (total cyanide), Pink (dissolved cyanide), Brown (arsenic speciation), Sterile (fecal coliform), EDTA (sulfite), HCl preserved vial (organics), Na<sub>2</sub>S<sub>2</sub>O<sub>3</sub> preserved vial (organics), and HG-1631 (total/dissolved mercury by method 1631).



L38583 Chain of Custody

**LDY RECORD**

L38583

 STEWART ENVIRONMENTAL CONSULTANTS, INC.  
 3801 Automation Way, Suite 200, Fort Collins, CO 80525

Batch:

Telephone: (970) 226-5500

Facsimile: (

PAGE \_\_\_\_ OF \_\_\_\_

EC USE ONLY								SAMPLER	
Client No.	CLIENT: <b>Stratus Companies - ACZ</b>							Name:	<i>JR Stewart</i>
Sample No.	SAMPLE COLLECTION INFO			CLIENT SAMPLE IDENTIFICATION	Matrix Type	QC Report Needed	Total No. of Cont.	Signature:	ANALYSES REQUESTED
<b>S10-</b>	Date	Time	Grab / Comp						
	7/19/17	13:00	CA	MIL-12	L	Y	1		Phenols
									Total Organic Carbon
									Method 8270 (all normal compounds, including those below)
									Benzyl Butyl Phthalate
									Bis(2-ethylhexyl) phthalate
									Di-n-butyl Phthalate
									Diethyl Phthalate
									Dimethyl Phthalate
									Di-n-octyl Phthalate
									1,4-Dioxane
									Benzoic Acid
									Benzyl alcohol
									2-Methylphenol

Compliance samples may require you to report the temperature of samples as they arrive in the laboratory. Would you like the temperature of samples recorded upon receipt by the laboratory? ☐ Yes ☒ No  
 Leaving this field blank implies that the incoming temperature is not requested.

RELINQUISHED BY	DATE / TIME	Received by	Date / Time	REQUESTED COMPLETION DATE	REPORT TO:	PHONE:
<i>JR Stewart</i>	7-19-17 1430	CTF 7/19/17	1430			
Relinquished by	Date / Time	Received by	Date / Time	MATRIX TYPE	CLIENT:	
CTF 7/19/17	1630	ES 7/20/17	1133	WW = waste water DW = drinking water L = Liquid	ADDRESS:	
Relinquished by	Date / Time	Received by	Date / Time	S = soil SL = sludge A = Air SD = Solid	CITY, STATE ZIP:	
				CDPHE REPORT REQUIRED	INVOICE TO:	
Database Entry By	Date			PWSID #	ADDRESS:	
				Sample Kit Sent? Yes / No	CITY, STATE ZIP:	

August 04, 2017

**Report to:**

Trevor Mueller  
Stewart Environmental Consultants, Inc.  
2600 Canton Ct.  
Unit C  
Fort Collins, CO 80525

**Bill to:**

Accounts Payable  
Stewart Environmental Consultants, Inc.  
2600 Canton Ct.  
Unit C  
Fort Collins, CO 80525

cc: Trevor Mueller

**Project ID:**

ACZ Project ID: L38458

**Trevor Mueller:**

Enclosed are the analytical results for sample(s) submitted to ACZ Laboratories, Inc. (ACZ) on July 14, 2017. This project has been assigned to ACZ's project number, L38458. Please reference this number in all future inquiries.

All analyses were performed according to ACZ's Quality Assurance Plan. The enclosed results relate only to the samples received under L38458. Each section of this report has been reviewed and approved by the appropriate Laboratory Supervisor, or a qualified substitute.

Except as noted, the test results for the methods and parameters listed on ACZ's current NELAC certificate letter (#ACZ) meet all requirements of NELAC.

This report shall be used or copied only in its entirety. ACZ is not responsible for the consequences arising from the use of a partial report.

All samples and sub-samples associated with this project will be disposed of after September 03, 2017. If the samples are determined to be hazardous, additional charges apply for disposal (typically \$11/sample). If you would like the samples to be held longer than ACZ's stated policy or to be returned, please contact your Project Manager or Customer Service Representative for further details and associated costs. ACZ retains analytical raw data reports for ten years.

If you have any questions or other needs, please contact your Project Manager.



Sue Webber has reviewed and  
approved this report.



Stewart Environmental Consultants, Inc.

Project ID:

Sample ID: MW-13

ACZ Sample ID: L38458-01

Date Sampled: 07/12/17 10:00

Date Received: 07/14/17

Sample Matrix: Waste Water

## Wet Chemistry

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Carbon, total organic (TOC)	SM5310B	1	38.4		*	mg/L	1	5	08/01/17 11:00	bce

Arizona license number: AZ0102



**Report Header Explanations**

<i>Batch</i>	A distinct set of samples analyzed at a specific time
<i>Found</i>	Value of the QC Type of interest
<i>Limit</i>	Upper limit for RPD, in %.
<i>Lower</i>	Lower Recovery Limit, in % (except for LCSS, mg/Kg)
<i>MDL</i>	Method Detection Limit. Same as Minimum Reporting Limit unless omitted or equal to the PQL (see comment #5). Allows for instrument and annual fluctuations.
<i>PCN/SCN</i>	A number assigned to reagents/standards to trace to the manufacturer's certificate of analysis
<i>PQL</i>	Practical Quantitation Limit. Synonymous with the EPA term "minimum level".
<i>QC</i>	True Value of the Control Sample or the amount added to the Spike
<i>Rec</i>	Recovered amount of the true value or spike added, in % (except for LCSS, mg/Kg)
<i>RPD</i>	Relative Percent Difference, calculation used for Duplicate QC Types
<i>Upper</i>	Upper Recovery Limit, in % (except for LCSS, mg/Kg)
<i>Sample</i>	Value of the Sample of interest

**QC Sample Types**

<i>AS</i>	Analytical Spike (Post Digestion)	<i>LCSWD</i>	Laboratory Control Sample - Water Duplicate
<i>ASD</i>	Analytical Spike (Post Digestion) Duplicate	<i>LFB</i>	Laboratory Fortified Blank
<i>CCB</i>	Continuing Calibration Blank	<i>LFM</i>	Laboratory Fortified Matrix
<i>CCV</i>	Continuing Calibration Verification standard	<i>LFMD</i>	Laboratory Fortified Matrix Duplicate
<i>DUP</i>	Sample Duplicate	<i>LRB</i>	Laboratory Reagent Blank
<i>ICB</i>	Initial Calibration Blank	<i>MS</i>	Matrix Spike
<i>ICV</i>	Initial Calibration Verification standard	<i>MSD</i>	Matrix Spike Duplicate
<i>ICSAB</i>	Inter-element Correction Standard - A plus B solutions	<i>PBS</i>	Prep Blank - Soil
<i>LCSS</i>	Laboratory Control Sample - Soil	<i>PBW</i>	Prep Blank - Water
<i>LCSSD</i>	Laboratory Control Sample - Soil Duplicate	<i>PQV</i>	Practical Quantitation Verification standard
<i>LCSW</i>	Laboratory Control Sample - Water	<i>SDL</i>	Serial Dilution

**QC Sample Type Explanations**

Blanks	Verifies that there is no or minimal contamination in the prep method or calibration procedure.
Control Samples	Verifies the accuracy of the method, including the prep procedure.
Duplicates	Verifies the precision of the instrument and/or method.
Spikes/Fortified Matrix	Determines sample matrix interferences, if any.
Standard	Verifies the validity of the calibration.

**ACZ Qualifiers (Qual)**

<b>B</b>	Analyte concentration detected at a value between MDL and PQL. The associated value is an estimated quantity.
<b>H</b>	Analysis exceeded method hold time. pH is a field test with an immediate hold time.
<b>L</b>	Target analyte response was below the laboratory defined negative threshold.
<b>U</b>	The material was analyzed for, but was not detected above the level of the associated value. The associated value is either the sample quantitation limit or the sample detection limit.

**Method References**

- (1) EPA 600/4-83-020. Methods for Chemical Analysis of Water and Wastes, March 1983.
- (2) EPA 600/R-93-100. Methods for the Determination of Inorganic Substances in Environmental Samples, August 1993.
- (3) EPA 600/R-94-111. Methods for the Determination of Metals in Environmental Samples - Supplement I, May 1994.
- (4) EPA SW-846. Test Methods for Evaluating Solid Waste.
- (5) Standard Methods for the Examination of Water and Wastewater.

**Comments**

- (1) QC results calculated from raw data. Results may vary slightly if the rounded values are used in the calculations.
- (2) Soil, Sludge, and Plant matrices for Inorganic analyses are reported on a dry weight basis.
- (3) Animal matrices for Inorganic analyses are reported on an "as received" basis.
- (4) An asterisk in the "XQ" column indicates there is an extended qualifier and/or certification qualifier associated with the result.
- (5) If the MDL equals the PQL or the MDL column is omitted, the PQL is the reporting limit.

For a complete list of ACZ's Extended Qualifiers, please click:

<http://www.acz.com/public/extquallist.pdf>

Stewart Environmental Consultants, Inc.

ACZ Project ID: **L38458****Carbon, total organic (TOC)**

SM5310B

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
<b>WG427972</b>													
WG427972ICV	ICV	08/01/17 11:00	WI170707-1	100		104	mg/L	104	90	110			
WG427972ICB	ICB	08/01/17 11:00				U	mg/L		-3	3			
WG427972LFB	LFB	08/01/17 11:00	WI170531-4	50		49.2	mg/L	98	90	110			
L38390-01DUP	DUP	08/01/17 11:00			87.3	91.6	mg/L				5	20	RA
L38391-01AS	AS	08/01/17 11:00	WI170531-4	1000	29.9	1020	mg/L	99	90	110			

Stewart Environmental Consultants, Inc.

ACZ Project ID: **L38458**

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
L38458-01	/VG427972	Carbon, total organic (TOC)	SM5310B	Q5	Sample received with inadequate chemical preservation. Additional preservation performed by the laboratory.
			SM5310B	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).

Stewart Environmental Consultants, Inc.

Project ID:

Sample ID: MW-13

ACZ Sample ID: L38458-01

Date Sampled: 07/12/17 10:00

Date Received: 07/14/17

Sample Matrix: Waste Water

**Base Neutral Acid Extractables by GC/MS**

Analysis Method: M8270C GC/MS

Extract Method: M3520C

Workgroup: WG427395

Analyst: itm

Extract Date: 07/17/17 13:45

Analysis Date: 07/24/17 16:28

Compound	CAS	Result	QUAL	Dilution	XQ	Units	MDL	PQL
1,2,4-Trichlorobenzene	120-82-1	41	U	0.93	*	ug/L	2	9
1,2-Dichlorobenzene	95-50-1		U	0.93	*	ug/L	2	9
1,3-Dichlorobenzene	541-73-1		U	0.93	*	ug/L	2	9
1,4-Dichlorobenzene	106-46-7		U	0.93	*	ug/L	2	9
1,4-Dioxane	123-91-1	41		0.93	*	ug/L	2	9
2,4,5-Trichlorophenol	95-95-4		U	0.93	*	ug/L	9	50
2,4,6-Trichlorophenol	88-06-2		U	0.93	*	ug/L	2	9
2,4-Dichlorophenol	120-83-2		U	0.93	*	ug/L	2	9
2,4-Dimethylphenol	105-67-9	41	U	0.93	*	ug/L	4	20
2,4-Dinitrophenol	51-28-5		U	0.93	*	ug/L	20	50
2,4-Dinitrotoluene	121-14-2		U	0.93	*	ug/L	2	9
2,6-Dinitrotoluene	606-20-8		U	0.93	*	ug/L	9	50
2-Chloronaphthalene	91-58-7	41	U	0.93	*	ug/L	2	9
2-Chlorophenol	95-57-8		U	0.93	*	ug/L	2	9
2-Methylnaphthalene	91-57-6		U	0.93	*	ug/L	2	9
2-Methylphenol	95-48-7		U	0.93	*	ug/L	2	9
2-Nitroaniline	88-74-4	41	U	0.93	*	ug/L	9	50
2-Nitrophenol	88-75-5		U	0.93	*	ug/L	4	20
3- & 4-Methylphenol	1319-77-3		U	0.93	*	ug/L	4	20
3,3-Dichlorobenzidine	91-94-1		U	0.93	*	ug/L	20	50
3-Nitroaniline	99-09-2	41	U	0.93	*	ug/L	9	50
4,6-Dinitro-2-methylphenol	534-52-1		U	0.93	*	ug/L	9	50
4-Bromophenyl phenyl ether	101-55-3		U	0.93	*	ug/L	2	9
4-Chloro-3-methylphenol	59-50-7		U	0.93	*	ug/L	2	9
4-Chloroaniline	106-47-8	41	U	0.93	*	ug/L	2	9
4-Chlorophenyl phenyl ether	7005-72-3		U	0.93	*	ug/L	2	9
4-Nitroaniline	100-01-6		U	0.93	*	ug/L	9	50
4-Nitrophenol	100-02-07		U	0.93	*	ug/L	9	50
Acenaphthene	83-32-9	41	U	0.93	*	ug/L	2	9
Acenaphthylene	208-96-8		U	0.93	*	ug/L	2	9
Aniline	62-53-3		U	0.93	*	ug/L	9	50
Anthracene	120-12-7		U	0.93	*	ug/L	2	9
Azobenzene	103-33-3	41	U	0.93	*	ug/L	9	50
Benzidine	92-87-5		U	0.93	*	ug/L	4	20
Benzo(a)anthracene	56-55-3		U	0.93	*	ug/L	2	9
Benzo(a)pyrene	50-32-8		U	0.93	*	ug/L	2	9
Benzo(b)fluoranthene	205-99-2	41	U	0.93	*	ug/L	2	9
Benzo(g,h,i)perylene	191-24-2		U	0.93	*	ug/L	2	9

**Stewart Environmental Consultants, Inc.**

Project ID:

Sample ID: MW-13

ACZ Sample ID: **L38458-01**

Date Sampled: 07/12/17 10:00

Date Received: 07/14/17

Sample Matrix: Waste Water

Benzo(k)fluoranthene	207-08-9	U	0.93	*	ug/L	2	9
Benzoic Acid	65-85-0	U	0.93	*	ug/L	20	50
Benzyl alcohol	100-51-6	U	0.93	*	ug/L	2	9
Bis(2-chloroethoxy)methane	111-91-1	U	0.93	*	ug/L	2	9
Bis(2-chloroethyl) ether	111-44-4	U	0.93	*	ug/L	2	9
Bis(2-chloroisopropyl) ether	108-60-1	U	0.93	*	ug/L	2	9
Bis(2-ethylhexyl) phthalate	117-81-7	U	0.93	*	ug/L	4	20
Butyl benzyl phthalate	85-68-7	U	0.93	*	ug/L	2	9
Chrysene	218-01-9	U	0.93	*	ug/L	2	9
Dibenzo(a,h)anthracene	53-70-3	U	0.93	*	ug/L	2	9
Dibenzofuran	132-64-9	U	0.93	*	ug/L	2	9
Diethylphthalate	84-66-2	U	0.93	*	ug/L	2	9
Dimethyl phthalate	131-11-3	U	0.93	*	ug/L	2	9
Di-n-butyl phthalate	84-74-2	U	0.93	*	ug/L	2	9
Di-n-octyl phthalate	117-84-0	U	0.93	*	ug/L	2	9
Fluoranthene	206-44-0	U	0.93	*	ug/L	2	9
Fluorene	86-73-7	U	0.93	*	ug/L	2	9
Hexachlorobenzene	118-74-1	U	0.93	*	ug/L	2	9
Hexachlorobutadiene	87-68-3	U	0.93	*	ug/L	2	9
Hexachlorocyclopentadiene	77-47-4	U	0.93	*	ug/L	4	20
Hexachloroethane	67-72-1	U	0.93	*	ug/L	2	9
Indeno(1,2,3-cd)pyrene	193-39-5	U	0.93	*	ug/L	2	9
Isophorone	78-59-1	U	0.93	*	ug/L	2	9
Naphthalene	91-20-3	U	0.93	*	ug/L	2	9
Nitrobenzene	98-95-3	U	0.93	*	ug/L	2	9
N-Nitrosodimethylamine	62-75-9	U	0.93	*	ug/L	9	50
N-Nitrosodi-n-propylamine	621-64-7	U	0.93	*	ug/L	2	9
N-Nitrosodiphenylamine	86-30-6	U	0.93	*	ug/L	2	9
Pentachlorophenol	87-86-5	U	0.93	*	ug/L	9	50
Phenanthrene	85-01-8	U	0.93	*	ug/L	2	9
Phenol	108-95-2	U	0.93	*	ug/L	4	20
Pyrene	129-00-0	U	0.93	*	ug/L	2	9

Surrogate Recoveries	CAS	% Recovery	Dilution	XQ	Units	LCL	UCL
2,4,6-Tribromophenol	118-79-6	102.5	0.93	*	%	40	125
2-Fluorobiphenyl	321-60-8	86	0.93	*	%	50	110
2-Fluorophenol	367-12-4	71.7	0.93	*	%	54	100
Nitrobenzene-d5	4165-60-0	83.1	0.93	*	%	40	110
Phenol-d6	13127-88-3	87	0.93	*	%	47	113
Terphenyl-d14	1718-51-0	55.1	0.93	*	%	50	135

Arizona license number: AZ0102

**Report Header Explanations**

<i>Batch</i>	A distinct set of samples analyzed at a specific time
<i>Found</i>	Value of the QC Type of interest
<i>Limit</i>	Upper limit for RPD, in %.
<i>Lower</i>	Lower Recovery Limit, in % (except for LCSS, mg/Kg)
<i>LCL</i>	Lower Control Limit
<i>MDL</i>	Method Detection Limit. Same as Minimum Reporting Limit unless omitted or equal to the PQL (see comment #4) Allows for instrument and annual fluctuations.
<i>PCN/SCN</i>	A number assigned to reagents/standards to trace to the manufacturer's certificate of analysis
<i>PQL</i>	Practical Quantitation Limit. Synonymous with the EPA term "minimum level".
<i>QC</i>	True Value of the Control Sample or the amount added to the Spike
<i>Rec</i>	Amount of the true value or spike added recovered, in % (except for LCSS, mg/Kg)
<i>RPD</i>	Relative Percent Difference, calculation used for Duplicate QC Types
<i>Upper</i>	Upper Recovery Limit, in % (except for LCSS, mg/Kg)
<i>UCL</i>	Upper Control Limit
<i>Sample</i>	Value of the Sample of interest

**QC Sample Types**

<i>SURR</i>	Surrogate	<i>LFM</i>	Laboratory Fortified Matrix
<i>INTS</i>	Internal Standard	<i>LFMD</i>	Laboratory Fortified Matrix Duplicate
<i>DUP</i>	Sample Duplicate	<i>LRB</i>	Laboratory Reagent Blank
<i>LCSS</i>	Laboratory Control Sample - Soil	<i>MS/MSD</i>	Matrix Spike/Matrix Spike Duplicate
<i>LCSW</i>	Laboratory Control Sample - Water	<i>PBS</i>	Prep Blank - Soil
<i>LFB</i>	Laboratory Fortified Blank	<i>PBW</i>	Prep Blank - Water

**QC Sample Type Explanations**

Blanks	Verifies that there is no or minimal contamination in the prep method or calibration procedure.
Control Samples	Verifies the accuracy of the method, including the prep procedure.
Duplicates	Verifies the precision of the instrument and/or method.
Spikes/Fortified Matrix	Determines sample matrix interferences, if any.

**ACZ Qualifiers (Qual)**

B	Analyte concentration detected at a value between MDL and PQL. The associated value is an estimated quantity.
O	Analyte concentration is estimated due to result exceeding calibration range.
H	Analysis exceeded method hold time. pH is a field test with an immediate hold time.
J	Analyte concentration detected at a value between MDL and PQL. The associated value is an estimated quantity.
L	Target analyte response was below the laboratory defined negative threshold.
U	The material was analyzed for, but was not detected above the level of the associated value. The associated value is either the sample quantitation limit or the sample detection limit.

**Method References**

- (1) EPA 600/4-83-020. Methods for Chemical Analysis of Water and Wastes, March 1983.
- (2) EPA 600/4-90/020. Methods for the Determination of Organic Compounds in Drinking Water (I), July 1990.
- (3) EPA 600/R-92/129. Methods for the Determination of Organic Compounds in Drinking Water (II), July 1990.
- (4) EPA SW-846. Test Methods for Evaluating Solid Waste.
- (5) Standard Methods for the Examination of Water and Wastewater.

**Comments**

- (1) QC results calculated from raw data. Results may vary slightly if the rounded values are used in the calculations.
- (2) Excluding Oil & Grease, solid & biological matrices for organic analyses are reported on a wet weight basis.
- (3) An asterisk in the "XQ" column indicates there is an extended qualifier and/or certification qualifier associated with the result.
- (4) If the MDL equals the PQL or the MDL column is omitted, the PQL is the reporting limit.

For a complete list of ACZ's Extended Qualifiers, please click:

<http://www.acz.com/public/extqualist.pdf>

Stewart Environmental Consultants, Inc.

ACZ Project ID: L38458

### Base Neutral Acid Extractables by GC/MS

M8270C GC/MS

WG427395

MS	Sample ID: L38390-01MS		PCN/SCN: OPBNA170523-1				Analyzed:		07/21/17 15:50	
Compound	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
1,2,4-TRICHLOROBENZENE	50013	U	25	ug/L	53.0	35	105			
1,4-DICHLOROBENZENE	50013	U	28.6	ug/L	61.0	30	100			
2,4-DINITROTOLUENE	50013	U	34.9	ug/L	74.0	50	120			
2-CHLOROPHENOL	75080	U	50.1	ug/L	71.0	35	105			
4-CHLORO-3-METHYLPHENOL	75040	U	61.1	ug/L	86.0	45	110			
4-NITROPHENOL	75120	U	67	ug/L	95.0	0	125			
ACENAPHTHENE	50007	U	24.5	ug/L	52.0	45	110			
N-NITROSODI-N-PROPYLAMINE	50027	U	35.7	ug/L	76.0	35	130			
PENTACHLOROPHENOL	75040	U	31	ug/L	44.0	40	115			
PHENOL	75060	U	52.7	ug/L	74.0	0	115			
PYRENE	50003	U	U	ug/L	0.0	50	130			M2
2,4,6-TRIBROMOPHENOL (surr)				%	77.9	40	125			
2-FLUOROBIPHENYL (surr)				%	61.0	50	110			
2-FLUOROPHENOL (surr)				%	71.0	54	100			
NITROBENZENE-D5 (surr)				%	79.2	40	110			
PHENOL-D6 (surr)				%	83.8	47	113			
TERPHENYL-D14 (surr)				%	10.1	50	135			S6

DUP	Sample ID: L38391-01DUP					Analyzed: 07/21/17 16:57				
Compound	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
1,2,4-TRICHLOROBENZENE		U	U	ug/L				0	20	RA
1,2-DICHLOROBENZENE		U	U	ug/L				0	20	RA
1,3-DICHLOROBENZENE		U	U	ug/L				0	20	RA
1,4-DICHLOROBENZENE		U	4	ug/L				200	20	RA
1,4-DIOXANE		12	12.4	ug/L				3	20	RA
2,4,5-TRICHLOROPHENOL		U	U	ug/L				0	20	RA
2,4,6-TRICHLOROPHENOL		U	U	ug/L				0	20	RA
2,4-DICHLOROPHENOL		U	U	ug/L				0	20	RA
2,4-DIMETHYLPHENOL		U	U	ug/L				0	20	RA
2,4-DINITROPHENOL		U	U	ug/L				0	20	RA
2,4-DINITROTOLUENE		U	U	ug/L				0	20	RA
2,6-DINITROTOLUENE		U	U	ug/L				0	20	RA
2-CHLORONAPHTHALENE		U	U	ug/L				0	20	RA
2-CHLOROPHENOL		U	U	ug/L				0	20	RA
2-METHYLNAPHTHALENE		U	U	ug/L				0	20	RA
2-METHYLPHENOL		U	U	ug/L				0	20	RA
2-NITROANILINE		U	U	ug/L				0	20	RA
2-NITROPHENOL		U	U	ug/L				0	20	RA
3- & 4-METHYLPHENOL		U	U	ug/L				0	20	RA
3,3-DICHLOROBENZIDINE		U	U	ug/L				0	20	RA
3-NITROANILINE		U	U	ug/L				0	20	RA
4,6-DINITRO-2-METHYLPHENOL		U	U	ug/L				0	20	RA
4-BROMOPHENYL PHENYL ETHER		U	U	ug/L				0	20	RA
4-CHLORO-3-METHYLPHENOL		U	U	ug/L				0	20	RA

Stewart Environmental Consultants, Inc.

ACZ Project ID: L38458

4-CHLOROANILINE	U	U	ug/L	0	20	RA
4-CHLOROPHENYL PHENYL ETHER	U	U	ug/L	0	20	RA
4-NITROANILINE	U	U	ug/L	0	20	RA
4-NITROPHENOL	U	U	ug/L	0	20	RA
ACENAPHTHENE	U	U	ug/L	0	20	RA
ACENAPHTHYLENE	U	U	ug/L	0	20	RA
ANILINE	U	U	ug/L	0	20	RA
ANTHRACENE	U	U	ug/L	0	20	RA
AZOBENZENE	U	U	ug/L	0	20	RA
BENZIDINE	U	U	ug/L	0	20	RA
BENZO(A)ANTHRACENE	U	U	ug/L	0	20	RA
BENZO(A)PYRENE	U	U	ug/L	0	20	RA
BENZO(B)FLUORANTHENE	U	U	ug/L	0	20	RA
BENZO(G,H,I)PERYLENE	U	U	ug/L	0	20	RA
BENZO(K)FLUORANTHENE	U	U	ug/L	0	20	RA
BENZOIC ACID	U	U	ug/L	0	20	RA
BENZYL ALCOHOL	U	U	ug/L	0	20	RA
BIS(2-CHLOROETHOXY)METHANE	U	U	ug/L	0	20	RA
BIS(2-CHLOROETHYL) ETHER	U	U	ug/L	0	20	RA
BIS(2-CHLOROISOPROPYL) ETHER	U	U	ug/L	0	20	RA
BIS(2-ETHYLHEXYL) PHTHALATE	U	U	ug/L	0	20	RA
BUTYL BENZYL PHTHALATE	U	U	ug/L	0	20	RA
CHRYSENE	U	U	ug/L	0	20	RA
DIBENZO(A,H)ANTHRACENE	U	U	ug/L	0	20	RA
DIBENZOFURAN	U	U	ug/L	0	20	RA
DIETHYLPHTHALATE	U	U	ug/L	0	20	RA
DIMETHYL PHTHALATE	U	U	ug/L	0	20	RA
DI-N-BUTYL PHTHALATE	U	U	ug/L	0	20	RA
DI-N-OCTYL PHTHALATE	U	U	ug/L	0	20	RA
FLUORANTHENE	U	U	ug/L	0	20	RA
FLUORENE	U	U	ug/L	0	20	RA
HEXACHLOROBENZENE	U	U	ug/L	0	20	RA
HEXACHLOROBUTADIENE	U	U	ug/L	0	20	RA
HEXACHLOROCYCLOPENTADIENE	U	U	ug/L	0	20	RA
HEXACHLOROETHANE	U	U	ug/L	0	20	RA
INDENO(1,2,3-CD)PYRENE	U	U	ug/L	0	20	RA
ISOPHORONE	U	U	ug/L	0	20	RA
NAPHTHALENE	U	U	ug/L	0	20	RA
NITROBENZENE	U	U	ug/L	0	20	RA
N-NITROSODIMETHYLAMINE	U	U	ug/L	0	20	RA
N-NITROSODI-N-PROPYLAMINE	U	U	ug/L	0	20	RA
N-NITROSODIPHENYLAMINE	U	U	ug/L	0	20	RA
PENTACHLOROPHENOL	U	U	ug/L	0	20	RA
PHENANTHRENE	U	U	ug/L	0	20	RA
PHENOL	U	U	ug/L	0	20	RA
PYRENE	U	U	ug/L	0	20	RA
2,4,6-TRIBROMOPHENOL (surr)			%	94.5	40	125
2-FLUOROBIPHENYL (surr)			%	76.0	50	110
2-FLUOROPHENOL (surr)			%	71.5	54	100



Stewart Environmental Consultants, Inc.

ACZ Project ID: L38458

NITROBENZENE-D5 (surr)	%	77.3	40	110	
PHENOL-D6 (surr)	%	83.6	47	113	
TERPHENYL-D14 (surr)	%	20.4	50	135	S6

LCSW		Sample ID: WG426931LCSW		PCN/SCN: OPBNA170523-1			Analyzed: 07/21/17 14:10			
Compound	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
1,2,4-TRICHLOROBENZENE	50013		33.2	ug/L	66.0	35	105			
1,4-DICHLOROBENZENE	50013		31.7	ug/L	63.0	30	100			
2,4-DINITROTOLUENE	50013		43.3	ug/L	87.0	50	120			
2-CHLOROPHENOL	75080		53.5	ug/L	71.0	35	105			
4-CHLORO-3-METHYLPHENOL	75040		58.4	ug/L	78.0	45	110			
4-NITROPHENOL	75120		59	ug/L	79.0	0	125			
ACENAPHTHENE	50007		38	ug/L	76.0	45	110			
N-NITROSODI-N-PROPYLAMINE	50027		38.4	ug/L	77.0	35	130			
PENTACHLOROPHENOL	75040		55	ug/L	73.0	40	115			
PHENOL	75060		53.4	ug/L	71.0	0	115			
PYRENE	50003		41.7	ug/L	83.0	50	130			
2,4,6-TRIBROMOPHENOL (surr)				%	90.8	40	125			
2-FLUOROBIPHENYL (surr)				%	79.8	50	110			
2-FLUOROPHENOL (surr)				%	72.8	54	100			
NITROBENZENE-D5 (surr)				%	82.1	40	110			
PHENOL-D6 (surr)				%	80.5	47	113			
TERPHENYL-D14 (surr)				%	95.3	50	135			

LCSWD		Sample ID: WG426931LCSWD		PCN/SCN: OPBNA170523-1			Analyzed: 07/21/17 14:44			
Compound	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
1,2,4-TRICHLOROBENZENE	50013		35.1	ug/L	70.0	35	105	6	20	
1,4-DICHLOROBENZENE	50013		34.5	ug/L	69.0	30	100	8	20	
2,4-DINITROTOLUENE	50013		44.1	ug/L	88.0	50	120	2	20	
2-CHLOROPHENOL	75080		56.5	ug/L	75.0	35	105	5	20	
4-CHLORO-3-METHYLPHENOL	75040		60	ug/L	80.0	45	110	3	20	
4-NITROPHENOL	75120		58	ug/L	77.0	0	125	2	20	
ACENAPHTHENE	50007		40.4	ug/L	81.0	45	110	6	20	
N-NITROSODI-N-PROPYLAMINE	50027		40.6	ug/L	81.0	35	130	6	20	
PENTACHLOROPHENOL	75040		56	ug/L	75.0	40	115	2	20	
PHENOL	75060		54.6	ug/L	73.0	0	115	2	20	
PYRENE	50003		42.6	ug/L	85.0	50	130	2	20	
2,4,6-TRIBROMOPHENOL (surr)				%	88.8	40	125			
2-FLUOROBIPHENYL (surr)				%	80.6	50	110			
2-FLUOROPHENOL (surr)				%	71.6	54	100			
NITROBENZENE-D5 (surr)				%	82.5	40	110			
PHENOL-D6 (surr)				%	77.1	47	113			
TERPHENYL-D14 (surr)				%	93.7	50	135			

PBW		Sample ID: WG426931PBW					Analyzed: 07/21/17 13:37				
Compound	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual	
1,2,4-TRICHLOROBENZENE			U	ug/L		-10	10				
1,2-DICHLOROBENZENE			U	ug/L		-10	10				
1,3-DICHLOROBENZENE			U	ug/L		-10	10				

Stewart Environmental Consultants, Inc.

ACZ Project ID: **L38458**

1,4-DICHLOROBENZENE	U	ug/L	-10	10
1,4-DIOXANE	U	ug/L	-10	10
2,4,5-TRICHLOROPHENOL	U	ug/L	-50	50
2,4,6-TRICHLOROPHENOL	U	ug/L	-10	10
2,4-DICHLOROPHENOL	U	ug/L	-10	10
2,4-DIMETHYLPHENOL	U	ug/L	-20	20
2,4-DINITROPHENOL	U	ug/L	-50	50
2,4-DINITROTOLUENE	U	ug/L	-10	10
2,6-DINITROTOLUENE	U	ug/L	-50	50
2-CHLORONAPHTHALENE	U	ug/L	-10	10
2-CHLOROPHENOL	U	ug/L	-10	10
2-METHYLNAPHTHALENE	U	ug/L	-10	10
2-METHYLPHENOL	U	ug/L	-10	10
2-NITROANILINE	U	ug/L	-50	50
2-NITROPHENOL	U	ug/L	-20	20
3- & 4-METHYLPHENOL	U	ug/L	-20	20
3,3-DICHLOROBENZIDINE	U	ug/L	-50	50
3-NITROANILINE	U	ug/L	-50	50
4,6-DINITRO-2-METHYLPHENOL	U	ug/L	-50	50
4-BROMOPHENYL PHENYL ETHER	U	ug/L	-10	10
4-CHLORO-3-METHYLPHENOL	U	ug/L	-10	10
4-CHLOROANILINE	U	ug/L	-10	10
4-CHLOROPHENYL PHENYL ETHER	U	ug/L	-10	10
4-NITROANILINE	U	ug/L	-50	50
4-NITROPHENOL	U	ug/L	-50	50
ACENAPHTHENE	U	ug/L	-10	10
ACENAPHTHYLENE	U	ug/L	-10	10
ANILINE	U	ug/L	-50	50
ANTHRACENE	U	ug/L	-10	10
AZOBENZENE	U	ug/L	-50	50
BENZIDINE	U	ug/L	-20	20
BENZO(A)ANTHRACENE	U	ug/L	-10	10
BENZO(A)PYRENE	U	ug/L	-10	10
BENZO(B)FLUORANTHENE	U	ug/L	-10	10
BENZO(G,H,I)PERYLENE	U	ug/L	-10	10
BENZO(K)FLUORANTHENE	U	ug/L	-10	10
BENZOIC ACID	U	ug/L	-50	50
BENZYL ALCOHOL	U	ug/L	-10	10
BIS(2-CHLOROETHOXY)METHANE	U	ug/L	-10	10
BIS(2-CHLOROETHYL) ETHER	U	ug/L	-10	10
BIS(2-CHLOROISOPROPYL) ETHER	U	ug/L	-10	10
BIS(2-ETHYLHEXYL) PHTHALATE	U	ug/L	-20	20
BUTYL BENZYL PHTHALATE	U	ug/L	-10	10
CHRYSENE	U	ug/L	-10	10
DIBENZO(A,H)ANTHRACENE	U	ug/L	-10	10
DIBENZOFURAN	U	ug/L	-10	10
DIETHYLPHTHALATE	U	ug/L	-10	10
DIMETHYL PHTHALATE	U	ug/L	-10	10
DI-N-BUTYL PHTHALATE	U	ug/L	-10	10

Stewart Environmental Consultants, Inc.

ACZ Project ID: L38458

DI-N-OCTYL PHTHALATE	U	ug/L	-10	10	
FLUORANTHENE	U	ug/L	-10	10	
FLUORENE	U	ug/L	-10	10	
HEXACHLOROBENZENE	U	ug/L	-10	10	
HEXACHLOROBUTADIENE	U	ug/L	-10	10	
HEXACHLOROCYCLOPENTADIENE	U	ug/L	-20	20	
HEXACHLOROETHANE	U	ug/L	-10	10	
INDENO(1,2,3-CD)PYRENE	U	ug/L	-10	10	
ISOPHORONE	U	ug/L	-10	10	
NAPHTHALENE	U	ug/L	-10	10	
NITROBENZENE	U	ug/L	-10	10	
N-NITROSODIMETHYLAMINE	U	ug/L	-50	50	
N-NITROSODI-N-PROPYLAMINE	U	ug/L	-10	10	
N-NITROSODIPHENYLAMINE	U	ug/L	-10	10	
PENTACHLOROPHENOL	U	ug/L	-50	50	
PHENANTHRENE	U	ug/L	-10	10	
PHENOL	U	ug/L	-20	20	
PYRENE	U	ug/L	-10	10	
2,4,6-TRIBROMOPHENOL (surr)		%	77.4	40	125
2-FLUOROBIPHENYL (surr)		%	74.9	50	110
2-FLUOROPHENOL (surr)		%	71.1	54	100
NITROBENZENE-D5 (surr)		%	77.2	40	110
PHENOL-D6 (surr)		%	77.3	47	113
TERPHENYL-D14 (surr)		%	91.2	50	135

ACZ Project ID: **L38458**

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
L38458-01	WG427395	*All Compounds*	M8270C GC/MS	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
		Pyrene	M8270C GC/MS	M2	Matrix spike recovery was low, the recovery of the associated control sample (LCS or LFB) was acceptable.

**Stewart Environmental Consultants, Inc.**

ACZ Project ID: **L38458**

**GC/MS**

The following parameters are not offered for certification or are not covered by NELAC certificate #ACZ.

1,4-Dioxane

M8270C GC/MS

Stewart Environmental Consultants, Inc.

ACZ Project ID: L38458

Date Received: 07/14/2017 10:31

Received By:

Date Printed: 7/14/2017

**Receipt Verification**

	YES	NO	NA
1) Is a foreign soil permit included for applicable samples?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
2) Is the Chain of Custody form or other directive shipping papers present?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3) Does this project require special handling procedures such as CLP protocol?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
4) Are any samples NRC licensable material?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
5) If samples are received past hold time, proceed with requested short hold time analyses?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6) Is the Chain of Custody form complete and accurate?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7) Were any changes made to the Chain of Custody form prior to ACZ receiving the samples? A change was made in the Right Side section prior to ACZ custody.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

**Samples/Containers**

	YES	NO	NA
8) Are all containers intact and with no leaks?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9) Are all labels on containers and are they intact and legible?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
10) Do the sample labels and Chain of Custody form match for Sample ID, Date, and Time?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
11) For preserved bottle types, was the pH checked and within limits? <sup>1</sup> L38458-01 Container B1862422 (YELLOW GLASS): Added 2 mls sulfuric acid to the sub-sample to adjust the pH to the appropriate range.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
12) Is there sufficient sample volume to perform all requested work?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
13) Is the custody seal intact on all containers?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
14) Are samples that require zero headspace acceptable?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
15) Are all sample containers appropriate for analytical requirements? L38458-01 : A Yellow Glass container not received and a new container created from the Amber .	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
16) Is there an Hg-1631 trip blank present?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
17) Is there a VOA trip blank present?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
18) Were all samples received within hold time?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

**Chain of Custody Related Remarks**

**Client Contact Remarks**

**Shipping Containers**

Cooler Id	Temp (°C)	Temp Criteria (°C)	Rad (µR/Hr)	Custody Seal Intact?
3226	0.7	<=6.0	13	N/A

**Stewart Environmental Consultants, Inc.**

ACZ Project ID: L38458

Date Received: 07/14/2017 10:31

Received By:

Date Printed: 7/14/2017

Was ice present in the shipment container(s)?

Yes - Wet ice was present in the shipment container(s).

Client must contact an ACZ Project Manager if analysis should not proceed for samples received outside of their thermal preservation acceptance criteria.

<sup>1</sup> The preservation of the following bottle types is not checked at sample receipt: Orange (oil and grease), Purple (total cyanide), Pink (dissolved cyanide), Brown (arsenic speciation), Sterile (fecal coliform), EDTA (sulfite), HCl preserved vial (organics), Na<sub>2</sub>S<sub>2</sub>O<sub>3</sub> preserved vial (organics), and HG-1631 (total/dissolved mercury by method 1631).



138458

**Batch:**

**Facsimile: (**

PAGE OF

[illegible]



August 04, 2017

**Report to:**

Trevor Mueller

Stewart Environmental Consultants, Inc.

2600 Canton Ct.

Unit C

Fort Collins, CO 80525

**Bill to:**

Accounts Payable

Stewart Environmental Consultants, Inc.

2600 Canton Ct.

Unit C

Fort Collins, CO 80525

cc: Trevor Mueller

**Project ID:**

ACZ Project ID: L38418

**Trevor Mueller:**

Enclosed are the analytical results for sample(s) submitted to ACZ Laboratories, Inc. (ACZ) on July 13, 2017. This project has been assigned to ACZ's project number, L38418. Please reference this number in all future inquiries.

All analyses were performed according to ACZ's Quality Assurance Plan. The enclosed results relate only to the samples received under L38418. Each section of this report has been reviewed and approved by the appropriate Laboratory Supervisor, or a qualified substitute.

Except as noted, the test results for the methods and parameters listed on ACZ's current NELAC certificate letter (#ACZ) meet all requirements of NELAC.

This report shall be used or copied only in its entirety. ACZ is not responsible for the consequences arising from the use of a partial report.

All samples and sub-samples associated with this project will be disposed of after September 03, 2017. If the samples are determined to be hazardous, additional charges apply for disposal (typically \$11/sample). If you would like the samples to be held longer than ACZ's stated policy or to be returned, please contact your Project Manager or Customer Service Representative for further details and associated costs. ACZ retains analytical raw data reports for ten years.

If you have any questions or other needs, please contact your Project Manager.



Sue Webber has reviewed and  
approved this report.



Stewart Environmental Consultants, Inc.

Project ID:

Sample ID: MW-15

ACZ Sample ID: **L38418-01**

Date Sampled: 07/12/17 12:40

Date Received: 07/13/17

Sample Matrix: Waste Water

## Wet Chemistry

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Carbon, total organic (TOC)	SM5310B	20	141		*	mg/L	20	100	08/01/17 11:00	bce

Arizona license number: AZ0102



## Report Header Explanations

<i>Batch</i>	A distinct set of samples analyzed at a specific time
<i>Found</i>	Value of the QC Type of interest
<i>Limit</i>	Upper limit for RPD, in %.
<i>Lower</i>	Lower Recovery Limit, in % (except for LCSS, mg/Kg)
<i>MDL</i>	Method Detection Limit. Same as Minimum Reporting Limit unless omitted or equal to the PQL (see comment #5). Allows for instrument and annual fluctuations.
<i>PCN/SCN</i>	A number assigned to reagents/standards to trace to the manufacturer's certificate of analysis
<i>PQL</i>	Practical Quantitation Limit. Synonymous with the EPA term "minimum level".
<i>QC</i>	True Value of the Control Sample or the amount added to the Spike
<i>Rec</i>	Recovered amount of the true value or spike added, in % (except for LCSS, mg/Kg)
<i>RPD</i>	Relative Percent Difference, calculation used for Duplicate QC Types
<i>Upper</i>	Upper Recovery Limit, in % (except for LCSS, mg/Kg)
<i>Sample</i>	Value of the Sample of interest

## QC Sample Types

<i>AS</i>	Analytical Spike (Post Digestion)	<i>LCSWD</i>	Laboratory Control Sample - Water Duplicate
<i>ASD</i>	Analytical Spike (Post Digestion) Duplicate	<i>LFB</i>	Laboratory Fortified Blank
<i>CCB</i>	Continuing Calibration Blank	<i>LFM</i>	Laboratory Fortified Matrix
<i>CCV</i>	Continuing Calibration Verification standard	<i>LFMD</i>	Laboratory Fortified Matrix Duplicate
<i>DUP</i>	Sample Duplicate	<i>LRB</i>	Laboratory Reagent Blank
<i>ICB</i>	Initial Calibration Blank	<i>MS</i>	Matrix Spike
<i>ICV</i>	Initial Calibration Verification standard	<i>MSD</i>	Matrix Spike Duplicate
<i>ICSAB</i>	Inter-element Correction Standard - A plus B solutions	<i>PBS</i>	Prep Blank - Soil
<i>LCSS</i>	Laboratory Control Sample - Soil	<i>PBW</i>	Prep Blank - Water
<i>LCSSD</i>	Laboratory Control Sample - Soil Duplicate	<i>PQV</i>	Practical Quantitation Verification standard
<i>LCSW</i>	Laboratory Control Sample - Water	<i>SDL</i>	Serial Dilution

## QC Sample Type Explanations

Blanks	Verifies that there is no or minimal contamination in the prep method or calibration procedure.
Control Samples	Verifies the accuracy of the method, including the prep procedure.
Duplicates	Verifies the precision of the instrument and/or method.
Spikes/Fortified Matrix	Determines sample matrix interferences, if any.
Standard	Verifies the validity of the calibration.

## ACZ Qualifiers (Qual)

<i>B</i>	Analyte concentration detected at a value between MDL and PQL. The associated value is an estimated quantity.
<i>H</i>	Analysis exceeded method hold time. pH is a field test with an immediate hold time.
<i>L</i>	Target analyte response was below the laboratory defined negative threshold.
<i>U</i>	The material was analyzed for, but was not detected above the level of the associated value. The associated value is either the sample quantitation limit or the sample detection limit.

## Method References

- (1) EPA 600/4-83-020. Methods for Chemical Analysis of Water and Wastes, March 1983.
- (2) EPA 600/R-93-100. Methods for the Determination of Inorganic Substances in Environmental Samples, August 1993.
- (3) EPA 600/R-94-111. Methods for the Determination of Metals in Environmental Samples - Supplement I, May 1994.
- (4) EPA SW-846. Test Methods for Evaluating Solid Waste.
- (5) Standard Methods for the Examination of Water and Wastewater.

## Comments

- (1) QC results calculated from raw data. Results may vary slightly if the rounded values are used in the calculations.
- (2) Soil, Sludge, and Plant matrices for Inorganic analyses are reported on a dry weight basis.
- (3) Animal matrices for Inorganic analyses are reported on an "as received" basis.
- (4) An asterisk in the "XQ" column indicates there is an extended qualifier and/or certification qualifier associated with the result.
- (5) If the MDL equals the PQL or the MDL column is omitted, the PQL is the reporting limit.

For a complete list of ACZ's Extended Qualifiers, please click:

<http://www.acz.com/public/extquallist.pdf>

Stewart Environmental Consultants, Inc.

ACZ Project ID: **L38418**

### Carbon, total organic (TOC)

SM5310B

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
<b>WG427972</b>													
WG427972ICV	ICV	08/01/17 11:00	WI170707-1	100		104	mg/L	104	90	110			
WG427972ICB	ICB	08/01/17 11:00				U	mg/L		-3	3			
WG427972LFB	LFB	08/01/17 11:00	WI170531-4	50		49.2	mg/L	98	90	110			
L38390-01DUP	DUP	08/01/17 11:00			87.3	91.6	mg/L				5	20	RA
L38391-01AS	AS	08/01/17 11:00	WI170531-4	1000	29.9	1020	mg/L	99	90	110			

Stewart Environmental Consultants, Inc.

ACZ Project ID: **L38418**

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
L38418-01	JVG427972	Carbon, total organic (TOC)	SM5310B	Q5	Sample received with inadequate chemical preservation. Additional preservation performed by the laboratory.
			SM5310B	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).

Stewart Environmental Consultants, Inc.

Project ID:

Sample ID: MW-15

ACZ Sample ID: L38418-01

Date Sampled: 07/12/17 12:40

Date Received: 07/13/17

Sample Matrix: Waste Water

**Base Neutral Acid Extractables by GC/MS**

Analysis Method: M8270C GC/MS

Extract Method: M3520C

Workgroup: WG427395

Analyst: itm

Extract Date: 07/17/17 13:36

Analysis Date: 07/21/17 18:04

Compound	CAS	Result	QUAL	Dilution	XQ	Units	MDL	PQL
1,2,4-Trichlorobenzene	120-82-1		U	3.72	*	ug/L	7	40
1,2-Dichlorobenzene	95-50-1		U	3.72	*	ug/L	7	40
1,3-Dichlorobenzene	541-73-1		U	3.72	*	ug/L	7	40
1,4-Dichlorobenzene	106-46-7		U	3.72	*	ug/L	7	40
1,4-Dioxane	123-91-1		U	3.72	*	ug/L	7	40
2,4,5-Trichlorophenol	95-95-4		U	3.72	*	ug/L	40	200
2,4,6-Trichlorophenol	88-06-2		U	3.72	*	ug/L	7	40
2,4-Dichlorophenol	120-83-2		U	3.72	*	ug/L	7	40
2,4-Dimethylphenol	105-67-9		U	3.72	*	ug/L	10	70
2,4-Dinitrophenol	51-28-5		U	3.72	*	ug/L	70	200
2,4-Dinitrotoluene	121-14-2		U	3.72	*	ug/L	7	40
2,6-Dinitrotoluene	606-20-8		U	3.72	*	ug/L	40	200
2-Chloronaphthalene	91-58-7		U	3.72	*	ug/L	7	40
2-Chlorophenol	95-57-8		U	3.72	*	ug/L	7	40
2-Methylnaphthalene	91-57-6		U	3.72	*	ug/L	7	40
2-Methylphenol	95-48-7		U	3.72	*	ug/L	7	40
2-Nitroaniline	88-74-4		U	3.72	*	ug/L	40	200
2-Nitrophenol	88-75-5		U	3.72	*	ug/L	10	70
3- & 4-Methylphenol	1319-77-3		U	3.72	*	ug/L	10	70
3,3-Dichlorobenzidine	91-94-1		U	3.72	*	ug/L	70	200
3-Nitroaniline	99-09-2		U	3.72	*	ug/L	40	200
4,6-Dinitro-2-methylphenol	534-52-1		U	3.72	*	ug/L	40	200
4-Bromophenyl phenyl ether	101-55-3		U	3.72	*	ug/L	7	40
4-Chloro-3-methylphenol	59-50-7		U	3.72	*	ug/L	7	40
4-Chloroaniline	106-47-8		U	3.72	*	ug/L	7	40
4-Chlorophenyl phenyl ether	7005-72-3		U	3.72	*	ug/L	7	40
4-Nitroaniline	100-01-6		U	3.72	*	ug/L	40	200
4-Nitrophenol	100-02-07		U	3.72	*	ug/L	40	200
Acenaphthene	83-32-9		U	3.72	*	ug/L	7	40
Acenaphthylene	208-96-8		U	3.72	*	ug/L	7	40
Aniline	62-53-3		U	3.72	*	ug/L	40	200
Anthracene	120-12-7		U	3.72	*	ug/L	7	40
Azobenzene	103-33-3		U	3.72	*	ug/L	40	200
Benzidine	92-87-5		U	3.72	*	ug/L	10	70
Benzo(a)anthracene	56-55-3		U	3.72	*	ug/L	7	40
Benzo(a)pyrene	50-32-8		U	3.72	*	ug/L	7	40
Benzo(b)fluoranthene	205-99-2		U	3.72	*	ug/L	7	40
Benzo(g,h,i)perylene	191-24-2		U	3.72	*	ug/L	7	40
Benzo(k)fluoranthene	207-08-9		U	3.72	*	ug/L	7	40
Benzoic Acid	65-85-0		U	3.72	*	ug/L	70	200
Benzyl alcohol	100-51-6		U	3.72	*	ug/L	7	40

**Stewart Environmental Consultants, Inc.**

Project ID:

Sample ID: MW-15

ACZ Sample ID: **L38418-01**

Date Sampled: 07/12/17 12:40

Date Received: 07/13/17

Sample Matrix: Waste Water

Bis(2-chloroethoxy)methane	111-91-1	U	3.72	*	ug/L	7	40
Bis(2-chloroethyl) ether	111-44-4	U	3.72	*	ug/L	7	40
Bis(2-chloroisopropyl) ether	108-60-1	U	3.72	*	ug/L	7	40
Bis(2-ethylhexyl) phthalate	117-81-7	U	3.72	*	ug/L	10	70
Butyl benzyl phthalate	85-68-7	U	3.72	*	ug/L	7	40
Chrysene	218-01-9	U	3.72	*	ug/L	7	40
Dibenzo(a,h)anthracene	53-70-3	U	3.72	*	ug/L	7	40
Dibenzofuran	132-64-9	U	3.72	*	ug/L	7	40
Diethylphthalate	84-66-2	U	3.72	*	ug/L	7	40
Dimethyl phthalate	131-11-3	U	3.72	*	ug/L	7	40
Di-n-butyl phthalate	84-74-2	U	3.72	*	ug/L	7	40
Di-n-octyl phthalate	117-84-0	U	3.72	*	ug/L	7	40
Fluoranthene	206-44-0	U	3.72	*	ug/L	7	40
Fluorene	86-73-7	U	3.72	*	ug/L	7	40
Hexachlorobenzene	118-74-1	U	3.72	*	ug/L	7	40
Hexachlorobutadiene	87-68-3	U	3.72	*	ug/L	7	40
Hexachlorocyclopentadiene	77-47-4	U	3.72	*	ug/L	10	70
Hexachloroethane	67-72-1	U	3.72	*	ug/L	7	40
Indeno(1,2,3-cd)pyrene	193-39-5	U	3.72	*	ug/L	7	40
Isophorone	78-59-1	U	3.72	*	ug/L	7	40
Naphthalene	91-20-3	U	3.72	*	ug/L	7	40
Nitrobenzene	98-95-3	U	3.72	*	ug/L	7	40
N-Nitrosodimethylamine	62-75-9	U	3.72	*	ug/L	40	200
N-Nitrosodi-n-propylamine	621-64-7	U	3.72	*	ug/L	7	40
N-Nitrosodiphenylamine	86-30-6	U	3.72	*	ug/L	7	40
Pentachlorophenol	87-86-5	U	3.72	*	ug/L	40	200
Phenanthrene	85-01-8	U	3.72	*	ug/L	7	40
Phenol	108-95-2	U	3.72	*	ug/L	10	70
Pyrene	129-00-0	U	3.72	*	ug/L	7	40
Surrogate Recoveries	CAS	% Recovery	Dilution	XQ	Units	LCL	UCL
2,4,6-Tribromophenol	118-79-6	89.2	3.72	*	%	40	125
2-Fluorobiphenyl	321-60-8	92.3	3.72	*	%	50	110
2-Fluorophenol	367-12-4	56.8	3.72	*	%	54	100
Nitrobenzene-d5	4165-60-0	88.6	3.72	*	%	40	110
Phenol-d6	13127-88-3	76.9	3.72	*	%	47	113
Terphenyl-d14	1718-51-0	50.2	3.72	*	%	50	135

Arizona license number: AZ0102

**Report Header Explanations**

<i>Batch</i>	A distinct set of samples analyzed at a specific time
<i>Found</i>	Value of the QC Type of Interest
<i>Limit</i>	Upper limit for RPD, in %.
<i>Lower</i>	Lower Recovery Limit, in % (except for LCSS, mg/Kg)
<i>LCL</i>	Lower Control Limit
<i>MDL</i>	Method Detection Limit. Same as Minimum Reporting Limit unless omitted or equal to the PQL (see comment #4) Allows for instrument and annual fluctuations.
<i>PCN/SCN</i>	A number assigned to reagents/standards to trace to the manufacturer's certificate of analysis
<i>PQL</i>	Practical Quantitation Limit. Synonymous with the EPA term "minimum level".
<i>QC</i>	True Value of the Control Sample or the amount added to the Spike
<i>Rec</i>	Amount of the true value or spike added recovered, in % (except for LCSS, mg/Kg)
<i>RPD</i>	Relative Percent Difference, calculation used for Duplicate QC Types
<i>Upper</i>	Upper Recovery Limit, in % (except for LCSS, mg/Kg)
<i>UCL</i>	Upper Control Limit
<i>Sample</i>	Value of the Sample of interest

**QC Sample Types**

<i>SURR</i>	Surrogate	<i>LFM</i>	Laboratory Fortified Matrix
<i>INTS</i>	Internal Standard	<i>LFMD</i>	Laboratory Fortified Matrix Duplicate
<i>DUP</i>	Sample Duplicate	<i>LRB</i>	Laboratory Reagent Blank
<i>LCSS</i>	Laboratory Control Sample - Soil	<i>MS/MSD</i>	Matrix Spike/Matrix Spike Duplicate
<i>LCSW</i>	Laboratory Control Sample - Water	<i>PBS</i>	Prep Blank - Soil
<i>LFB</i>	Laboratory Fortified Blank	<i>PBW</i>	Prep Blank - Water

**QC Sample Type Explanations**

Blanks	Verifies that there is no or minimal contamination in the prep method or calibration procedure.
Control Samples	Verifies the accuracy of the method, including the prep procedure.
Duplicates	Verifies the precision of the instrument and/or method.
Spikes/Fortified Matrix	Determines sample matrix interferences, if any.

**ACZ Qualifiers (Qual)**

B	Analyte concentration detected at a value between MDL and PQL. The associated value is an estimated quantity.
O	Analyte concentration is estimated due to result exceeding calibration range.
H	Analysis exceeded method hold time. pH is a field test with an immediate hold time.
J	Analyte concentration detected at a value between MDL and PQL. The associated value is an estimated quantity.
L	Target analyte response was below the laboratory defined negative threshold.
U	The material was analyzed for, but was not detected above the level of the associated value. The associated value is either the sample quantitation limit or the sample detection limit.

**Method References**

- (1) EPA 600/4-83-020. Methods for Chemical Analysis of Water and Wastes, March 1983.
- (2) EPA 600/4-90/020. Methods for the Determination of Organic Compounds in Drinking Water (I), July 1990.
- (3) EPA 600/R-92/129. Methods for the Determination of Organic Compounds in Drinking Water (II), July 1990.
- (4) EPA SW-846. Test Methods for Evaluating Solid Waste.
- (5) Standard Methods for the Examination of Water and Wastewater.

**Comments**

- (1) QC results calculated from raw data. Results may vary slightly if the rounded values are used in the calculations.
- (2) Excluding Oil & Grease, solid & biological matrices for organic analyses are reported on a wet weight basis.
- (3) An asterisk in the "XQ" column indicates there is an extended qualifier and/or certification qualifier associated with the result.
- (4) If the MDL equals the PQL or the MDL column is omitted, the PQL is the reporting limit.

For a complete list of ACZ's Extended Qualifiers, please click:

<http://www.acz.com/public/extqualist.pdf>



Stewart Environmental Consultants, Inc.

ACZ Project ID: **L38418**

### Base Neutral Acid Extractables by GC/MS

M8270C GC/MS

WG427395

MS	Sample ID: L38390-01MS		PCN/SCN: OPBNA170523-1				Analyzed: 07/21/17 15:50			
Compound	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
1,2,4-TRICHLOROBENZENE	50013	U	25	ug/L	53.0	35	105			
1,4-DICHLOROBENZENE	50013	U	28.6	ug/L	61.0	30	100			
2,4-DINITROTOLUENE	50013	U	34.9	ug/L	74.0	50	120			
2-CHLOROPHENOL	75080	U	50.1	ug/L	71.0	35	105			
4-CHLORO-3-METHYLPHENOL	75040	U	61.1	ug/L	86.0	45	110			
4-NITROPHENOL	75120	U	67	ug/L	95.0	0	125			
ACENAPHTHENE	50007	U	24.5	ug/L	52.0	45	110			
N-NITROSODI-N-PROPYLAMINE	50027	U	35.7	ug/L	76.0	35	130			
PENTACHLOROPHENOL	75040	U	31	ug/L	44.0	40	115			
PHENOL	75060	U	52.7	ug/L	74.0	0	115			
PYRENE	50003	U	U	ug/L	0.0	50	130			M2
2,4,6-TRIBROMOPHENOL (surr)				%	77.9	40	125			
2-FLUOROBIPHENYL (surr)				%	61.0	50	110			
2-FLUOROPHENOL (surr)				%	71.0	54	100			
NITROBENZENE-D5 (surr)				%	79.2	40	110			
PHENOL-D6 (surr)				%	83.8	47	113			
TERPHENYL-D14 (surr)				%	10.1	50	135			S6

DUP	Sample ID: L38391-01DUP					Analyzed: 07/21/17 16:57				
Compound	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
1,2,4-TRICHLOROBENZENE		U	U	ug/L				0	20	RA
1,2-DICHLOROBENZENE		U	U	ug/L				0	20	RA
1,3-DICHLOROBENZENE		U	U	ug/L				0	20	RA
1,4-DICHLOROBENZENE		U	4	ug/L				200	20	RA
1,4-DIOXANE		12	12.4	ug/L				3	20	RA
2,4,5-TRICHLOROPHENOL		U	U	ug/L				0	20	RA
2,4,6-TRICHLOROPHENOL		U	U	ug/L				0	20	RA
2,4-DICHLOROPHENOL		U	U	ug/L				0	20	RA
2,4-DIMETHYLPHENOL		U	U	ug/L				0	20	RA
2,4-DINITROPHENOL		U	U	ug/L				0	20	RA
2,4-DINITROTOLUENE		U	U	ug/L				0	20	RA
2,6-DINITROTOLUENE		U	U	ug/L				0	20	RA
2-CHLORONAPHTHALENE		U	U	ug/L				0	20	RA
2-CHLOROPHENOL		U	U	ug/L				0	20	RA
2-METHYLNAPHTHALENE		U	U	ug/L				0	20	RA
2-METHYLPHENOL		U	U	ug/L				0	20	RA
2-NITROANILINE		U	U	ug/L				0	20	RA
2-NITROPHENOL		U	U	ug/L				0	20	RA
3- & 4-METHYLPHENOL		U	U	ug/L				0	20	RA
3,3-DICHLOROBENZIDINE		U	U	ug/L				0	20	RA
3-NITROANILINE		U	U	ug/L				0	20	RA
4,6-DINITRO-2-METHYLPHENOL		U	U	ug/L				0	20	RA
4-BROMOPHENYL PHENYL ETHER		U	U	ug/L				0	20	RA
4-CHLORO-3-METHYLPHENOL		U	U	ug/L				0	20	RA

Stewart Environmental Consultants, Inc.

ACZ Project ID: **L38418**

4-CHLOROANILINE	U	U	ug/L	0	20	RA
4-CHLOROPHENYL PHENYL ETHER	U	U	ug/L	0	20	RA
4-NITROANILINE	U	U	ug/L	0	20	RA
4-NITROPHENOL	U	U	ug/L	0	20	RA
ACENAPHTHENE	U	U	ug/L	0	20	RA
ACENAPHTHYLENE	U	U	ug/L	0	20	RA
ANILINE	U	U	ug/L	0	20	RA
ANTHRACENE	U	U	ug/L	0	20	RA
AZOBENZENE	U	U	ug/L	0	20	RA
BENZIDINE	U	U	ug/L	0	20	RA
BENZO(A)ANTHRACENE	U	U	ug/L	0	20	RA
BENZO(A)PYRENE	U	U	ug/L	0	20	RA
BENZO(B)FLUORANTHENE	U	U	ug/L	0	20	RA
BENZO(G,H,I)PERYLENE	U	U	ug/L	0	20	RA
BENZO(K)FLUORANTHENE	U	U	ug/L	0	20	RA
BENZOIC ACID	U	U	ug/L	0	20	RA
BENZYL ALCOHOL	U	U	ug/L	0	20	RA
BIS(2-CHLOROETHOXY)METHANE	U	U	ug/L	0	20	RA
BIS(2-CHLOROETHYL) ETHER	U	U	ug/L	0	20	RA
BIS(2-CHLOROISOPROPYL) ETHER	U	U	ug/L	0	20	RA
BIS(2-ETHYLHEXYL) PHTHALATE	U	U	ug/L	0	20	RA
BUTYL BENZYL PHTHALATE	U	U	ug/L	0	20	RA
CHRYSENE	U	U	ug/L	0	20	RA
DIBENZO(A,H)ANTHRACENE	U	U	ug/L	0	20	RA
DIBENZOFURAN	U	U	ug/L	0	20	RA
DIETHYLPHTHALATE	U	U	ug/L	0	20	RA
DIMETHYL PHTHALATE	U	U	ug/L	0	20	RA
DI-N-BUTYL PHTHALATE	U	U	ug/L	0	20	RA
DI-N-OCTYL PHTHALATE	U	U	ug/L	0	20	RA
FLUORANTHENE	U	U	ug/L	0	20	RA
FLUORENE	U	U	ug/L	0	20	RA
HEXACHLOROBENZENE	U	U	ug/L	0	20	RA
HEXACHLOROBUTADIENE	U	U	ug/L	0	20	RA
HEXACHLOROCYCLOPENTADIENE	U	U	ug/L	0	20	RA
HEXACHLOROETHANE	U	U	ug/L	0	20	RA
INDENO(1,2,3-CD)PYRENE	U	U	ug/L	0	20	RA
ISOPHORONE	U	U	ug/L	0	20	RA
NAPHTHALENE	U	U	ug/L	0	20	RA
NITROBENZENE	U	U	ug/L	0	20	RA
N-NITROSODIMETHYLAMINE	U	U	ug/L	0	20	RA
N-NITROSODI-N-PROPYLAMINE	U	U	ug/L	0	20	RA
N-NITROSODIPHENYLAMINE	U	U	ug/L	0	20	RA
PENTACHLOROPHENOL	U	U	ug/L	0	20	RA
PHENANTHRENE	U	U	ug/L	0	20	RA
PHENOL	U	U	ug/L	0	20	RA
PYRENE	U	U	ug/L	0	20	RA
2,4,6-TRIBROMOPHENOL (surr)			%	94.5	40	125
2-FLUOROBIPHENYL (surr)			%	76.0	50	110
2-FLUOROPHENOL (surr)			%	71.5	54	100

Stewart Environmental Consultants, Inc.

ACZ Project ID: **L38418**

NITROBENZENE-D5 (surr)	%	77.3	40	110	
PHENOL-D6 (surr)	%	83.6	47	113	
TERPHENYL-D14 (surr)	%	20.4	50	135	S6

LCSW		Sample ID: WG426931LCSW		PCN/SCN: OPBNA170523-1			Analyzed: 07/21/17 14:10			
Compound	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
1,2,4-TRICHLOROBENZENE	50013		33.2	ug/L	66.0	35	105			
1,4-DICHLOROBENZENE	50013		31.7	ug/L	63.0	30	100			
2,4-DINITROTOLUENE	50013		43.3	ug/L	87.0	50	120			
2-CHLOROPHENOL	75080		53.5	ug/L	71.0	35	105			
4-CHLORO-3-METHYLPHENOL	75040		58.4	ug/L	78.0	45	110			
4-NITROPHENOL	75120		59	ug/L	79.0	0	125			
ACENAPHTHENE	50007		38	ug/L	76.0	45	110			
N-NITROSODI-N-PROPYLAMINE	50027		38.4	ug/L	77.0	35	130			
PENTACHLOROPHENOL	75040		55	ug/L	73.0	40	115			
PHENOL	75060		53.4	ug/L	71.0	0	115			
PYRENE	50003		41.7	ug/L	83.0	50	130			
2,4,6-TRIBROMOPHENOL (surr)				%	90.8	40	125			
2-FLUOROBIPHENYL (surr)				%	79.8	50	110			
2-FLUOROPHENOL (surr)				%	72.8	54	100			
NITROBENZENE-D5 (surr)				%	82.1	40	110			
PHENOL-D6 (surr)				%	80.5	47	113			
TERPHENYL-D14 (surr)				%	95.3	50	135			

LCSWD		Sample ID: WG426931LCSWD		PCN/SCN: OPBNA170523-1			Analyzed: 07/21/17 14:44			
Compound	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
1,2,4-TRICHLOROBENZENE	50013		35.1	ug/L	70.0	35	105	6	20	
1,4-DICHLOROBENZENE	50013		34.5	ug/L	69.0	30	100	8	20	
2,4-DINITROTOLUENE	50013		44.1	ug/L	88.0	50	120	2	20	
2-CHLOROPHENOL	75080		56.5	ug/L	75.0	35	105	5	20	
4-CHLORO-3-METHYLPHENOL	75040		60	ug/L	80.0	45	110	3	20	
4-NITROPHENOL	75120		58	ug/L	77.0	0	125	2	20	
ACENAPHTHENE	50007		40.4	ug/L	81.0	45	110	6	20	
N-NITROSODI-N-PROPYLAMINE	50027		40.6	ug/L	81.0	35	130	6	20	
PENTACHLOROPHENOL	75040		56	ug/L	75.0	40	115	2	20	
PHENOL	75060		54.6	ug/L	73.0	0	115	2	20	
PYRENE	50003		42.6	ug/L	85.0	50	130	2	20	
2,4,6-TRIBROMOPHENOL (surr)				%	88.8	40	125			
2-FLUOROBIPHENYL (surr)				%	80.6	50	110			
2-FLUOROPHENOL (surr)				%	71.6	54	100			
NITROBENZENE-D5 (surr)				%	82.5	40	110			
PHENOL-D6 (surr)				%	77.1	47	113			
TERPHENYL-D14 (surr)				%	93.7	50	135			

PBW		Sample ID: WG426931PBW					Analyzed: 07/21/17 13:37			
Compound	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
1,2,4-TRICHLOROBENZENE			U	ug/L		-10	10			
1,2-DICHLOROBENZENE			U	ug/L		-10	10			
1,3-DICHLOROBENZENE			U	ug/L		-10	10			

Stewart Environmental Consultants, Inc.

ACZ Project ID: **L38418**

1,4-DICHLOROBENZENE	U	ug/L	-10	10
1,4-DIOXANE	U	ug/L	-10	10
2,4,5-TRICHLOROPHENOL	U	ug/L	-50	50
2,4,6-TRICHLOROPHENOL	U	ug/L	-10	10
2,4-DICHLOROPHENOL	U	ug/L	-10	10
2,4-DIMETHYLPHENOL	U	ug/L	-20	20
2,4-DINITROPHENOL	U	ug/L	-50	50
2,4-DINITROTOLUENE	U	ug/L	-10	10
2,6-DINITROTOLUENE	U	ug/L	-50	50
2-CHLORONAPHTHALENE	U	ug/L	-10	10
2-CHLOROPHENOL	U	ug/L	-10	10
2-METHYLNAPHTHALENE	U	ug/L	-10	10
2-METHYLPHENOL	U	ug/L	-10	10
2-NITROANILINE	U	ug/L	-50	50
2-NITROPHENOL	U	ug/L	-20	20
3- & 4-METHYLPHENOL	U	ug/L	-20	20
3,3-DICHLOROBENZIDINE	U	ug/L	-50	50
3-NITROANILINE	U	ug/L	-50	50
4,6-DINITRO-2-METHYLPHENOL	U	ug/L	-50	50
4-BROMOPHENYL PHENYL ETHER	U	ug/L	-10	10
4-CHLORO-3-METHYLPHENOL	U	ug/L	-10	10
4-CHLOROANILINE	U	ug/L	-10	10
4-CHLOROPHENYL PHENYL ETHER	U	ug/L	-10	10
4-NITROANILINE	U	ug/L	-50	50
4-NITROPHENOL	U	ug/L	-50	50
ACENAPHTHENE	U	ug/L	-10	10
ACENAPHTHYLENE	U	ug/L	-10	10
ANILINE	U	ug/L	-50	50
ANTHRACENE	U	ug/L	-10	10
AZOBENZENE	U	ug/L	-50	50
BENZIDINE	U	ug/L	-20	20
BENZO(A)ANTHRACENE	U	ug/L	-10	10
BENZO(A)PYRENE	U	ug/L	-10	10
BENZO(B)FLUORANTHENE	U	ug/L	-10	10
BENZO(G,H,I)PERYLENE	U	ug/L	-10	10
BENZO(K)FLUORANTHENE	U	ug/L	-10	10
BENZOIC ACID	U	ug/L	-50	50
BENZYL ALCOHOL	U	ug/L	-10	10
BIS(2-CHLOROETHOXY)METHANE	U	ug/L	-10	10
BIS(2-CHLOROETHYL) ETHER	U	ug/L	-10	10
BIS(2-CHLOROISOPROPYL) ETHER	U	ug/L	-10	10
BIS(2-ETHYLHEXYL) PHTHALATE	U	ug/L	-20	20
BUTYL BENZYL PHTHALATE	U	ug/L	-10	10
CHRYSENE	U	ug/L	-10	10
DIBENZO(A,H)ANTHRACENE	U	ug/L	-10	10
DIBENZOFURAN	U	ug/L	-10	10
DIETHYLPHTHALATE	U	ug/L	-10	10
DIMETHYL PHTHALATE	U	ug/L	-10	10
DI-N-BUTYL PHTHALATE	U	ug/L	-10	10

Stewart Environmental Consultants, Inc.

ACZ Project ID: **L38418**

DI-N-OCTYL PHTHALATE	U	ug/L	-10	10	
FLUORANTHENE	U	ug/L	-10	10	
FLUORENE	U	ug/L	-10	10	
HEXACHLOROBENZENE	U	ug/L	-10	10	
HEXACHLOROBUTADIENE	U	ug/L	-10	10	
HEXACHLOROCYCLOPENTADIENE	U	ug/L	-20	20	
HEXACHLOROETHANE	U	ug/L	-10	10	
INDENO(1,2,3-CD)PYRENE	U	ug/L	-10	10	
ISOPHORONE	U	ug/L	-10	10	
NAPHTHALENE	U	ug/L	-10	10	
NITROBENZENE	U	ug/L	-10	10	
N-NITROSODIMETHYLAMINE	U	ug/L	-50	50	
N-NITROSODI-N-PROPYLAMINE	U	ug/L	-10	10	
N-NITROSODIPHENYLAMINE	U	ug/L	-10	10	
PENTACHLOROPHENOL	U	ug/L	-50	50	
PHENANTHRENE	U	ug/L	-10	10	
PHENOL	U	ug/L	-20	20	
PYRENE	U	ug/L	-10	10	
2,4,6-TRIBROMOPHENOL (surr)		%	77.4	40	125
2-FLUOROBIPHENYL (surr)		%	74.9	50	110
2-FLUOROPHENOL (surr)		%	71.1	54	100
NITROBENZENE-D5 (surr)		%	77.2	40	110
PHENOL-D6 (surr)		%	77.3	47	113
TERPHENYL-D14 (surr)		%	91.2	50	135

ACZ Project ID: **L38418**

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
L38418-01	WG427395	*All Compounds*	M8270C GC/MS	D1	Sample required dilution due to matrix.
			M8270C GC/MS	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
		Pyrene	M8270C GC/MS	M2	Matrix spike recovery was low, the recovery of the associated control sample (LCS or LFB) was acceptable.

**Stewart Environmental Consultants, Inc.**

ACZ Project ID: **L38418**

**GC/MS**

The following parameters are not offered for certification or are not covered by NELAC certificate #ACZ.

1,4-Dioxane

M8270C GC/MS

Stewart Environmental Consultants, Inc.

ACZ Project ID: L38418

Date Received: 07/13/2017 10:20

Received By:

Date Printed: 7/13/2017

**Receipt Verification**

	YES	NO	NA
1) Is a foreign soil permit included for applicable samples?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
2) Is the Chain of Custody form or other directive shipping papers present?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3) Does this project require special handling procedures such as CLP protocol?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
4) Are any samples NRC licensable material?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
5) If samples are received past hold time, proceed with requested short hold time analyses?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6) Is the Chain of Custody form complete and accurate?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7) Were any changes made to the Chain of Custody form prior to ACZ receiving the samples?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
A change was made in the Analyses Requested Line 2 and Total No. of Cont. Line 1 section prior to ACZ custody.			

**Samples/Containers**

	YES	NO	NA
8) Are all containers intact and with no leaks?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9) Are all labels on containers and are they intact and legible?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
10) Do the sample labels and Chain of Custody form match for Sample ID, Date, and Time?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
11) For preserved bottle types, was the pH checked and within limits? <sup>1</sup>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
L38418-01 Container B1861617 (YELLOW GLASS): Added 2 mls sulfuric acid to the sub-sample to adjust the pH to the appropriate range.			
12) Is there sufficient sample volume to perform all requested work?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
13) Is the custody seal intact on all containers?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
14) Are samples that require zero headspace acceptable?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
15) Are all sample containers appropriate for analytical requirements?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
L38418-01 : A Yellow Glass container not received and a new container created from the Amber .			
16) Is there an Hg-1631 trip blank present?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
17) Is there a VOA trip blank present?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
18) Were all samples received within hold time?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

**Chain of Custody Related Remarks**

**Client Contact Remarks**

**Shipping Containers**

Cooler Id	Temp (°C)	Temp Criteria (°C)	Rad (µR/Hr)	Custody Seal Intact?
4003	1.2	<=6.0	13	Yes



**Stewart Environmental Consultants, Inc.**

ACZ Project ID: L38418

Date Received: 07/13/2017 10:20

Received By:

Date Printed: 7/13/2017

Was ice present in the shipment container(s)?

Yes - Wet ice was present in the shipment container(s).

Client must contact an ACZ Project Manager if analysis should not proceed for samples received outside of their thermal preservation acceptance criteria.

<sup>1</sup> The preservation of the following bottle types is not checked at sample receipt: Orange (oil and grease), Purple (total cyanide), Pink (dissolved cyanide), Brown (arsenic speciation), Sterile (fecal coliform), EDTA (sulfite), HCl preserved vial (organics), Na<sub>2</sub>S<sub>2</sub>O<sub>3</sub> preserved vial (organics), and HG-1631 (total/dissolved mercury by method 1631).

**WART ENVIRONMENTAL CONSULTANTS, INC.**

**3801 Automation Way, Suite 200, Fort Collins, CO 80525**

**Batch:**

**Telephone: (970) 226-5500**

Facsimile: ( ) PAGE OF

[illegible]

-TOC sample received unpreserved.

August 04, 2017

**Report to:**

Trevor Mueller

Stewart Environmental Consultants, Inc.

2600 Canton Ct.

Unit C

Fort Collins, CO 80525

cc: Trevor Mueller

**Bill to:**

Accounts Payable

Stewart Environmental Consultants, Inc.

2600 Canton Ct.

Unit C

Fort Collins, CO 80525

**Project ID:**

ACZ Project ID: L38586

**Trevor Mueller:**

Enclosed are the analytical results for sample(s) submitted to ACZ Laboratories, Inc. (ACZ) on July 20, 2017. This project has been assigned to ACZ's project number, L38586. Please reference this number in all future inquiries.

All analyses were performed according to ACZ's Quality Assurance Plan. The enclosed results relate only to the samples received under L38586. Each section of this report has been reviewed and approved by the appropriate Laboratory Supervisor, or a qualified substitute.

Except as noted, the test results for the methods and parameters listed on ACZ's current NELAC certificate letter (#ACZ) meet all requirements of NELAC.

This report shall be used or copied only in its entirety. ACZ is not responsible for the consequences arising from the use of a partial report.

All samples and sub-samples associated with this project will be disposed of after September 03, 2017. If the samples are determined to be hazardous, additional charges apply for disposal (typically \$11/sample). If you would like the samples to be held longer than ACZ's stated policy or to be returned, please contact your Project Manager or Customer Service Representative for further details and associated costs. ACZ retains analytical raw data reports for ten years.

If you have any questions or other needs, please contact your Project Manager.



Sue Webber has reviewed and  
approved this report.



Stewart Environmental Consultants, Inc.

Project ID:

Sample ID: MW-15

ACZ Sample ID: **L38586-01**

Date Sampled: 07/17/17 13:00

Date Received: 07/20/17

Sample Matrix: Waste Water

## Wet Chemistry

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Carbon, total organic (TOC)	SM5310B	1	151		*	mg/L	1	5	08/01/17 11:00	bce

Arizona license number: AZ0102



## Report Header Explanations

<i>Batch</i>	A distinct set of samples analyzed at a specific time
<i>Found</i>	Value of the QC Type of interest
<i>Limit</i>	Upper limit for RPD, in %.
<i>Lower</i>	Lower Recovery Limit, in % (except for LCSS, mg/Kg)
<i>MDL</i>	Method Detection Limit. Same as Minimum Reporting Limit unless omitted or equal to the PQL (see comment #5). Allows for instrument and annual fluctuations.
<i>PCN/SCN</i>	A number assigned to reagents/standards to trace to the manufacturer's certificate of analysis
<i>PQL</i>	Practical Quantitation Limit. Synonymous with the EPA term "minimum level".
<i>QC</i>	True Value of the Control Sample or the amount added to the Spike
<i>Rec</i>	Recovered amount of the true value or spike added, in % (except for LCSS, mg/Kg)
<i>RPD</i>	Relative Percent Difference, calculation used for Duplicate QC Types
<i>Upper</i>	Upper Recovery Limit, in % (except for LCSS, mg/Kg)
<i>Sample</i>	Value of the Sample of interest

## QC Sample Types

<i>AS</i>	Analytical Spike (Post Digestion)	<i>LCSWD</i>	Laboratory Control Sample - Water Duplicate
<i>ASD</i>	Analytical Spike (Post Digestion) Duplicate	<i>LFB</i>	Laboratory Fortified Blank
<i>CCB</i>	Continuing Calibration Blank	<i>LFM</i>	Laboratory Fortified Matrix
<i>CCV</i>	Continuing Calibration Verification standard	<i>LFMD</i>	Laboratory Fortified Matrix Duplicate
<i>DUP</i>	Sample Duplicate	<i>LRB</i>	Laboratory Reagent Blank
<i>ICB</i>	Initial Calibration Blank	<i>MS</i>	Matrix Spike
<i>ICV</i>	Initial Calibration Verification standard	<i>MSD</i>	Matrix Spike Duplicate
<i>ICSAB</i>	Inter-element Correction Standard - A plus B solutions	<i>PBS</i>	Prep Blank - Soil
<i>LCSS</i>	Laboratory Control Sample - Soil	<i>PBW</i>	Prep Blank - Water
<i>LCSSD</i>	Laboratory Control Sample - Soil Duplicate	<i>PQV</i>	Practical Quantitation Verification standard
<i>LCSW</i>	Laboratory Control Sample - Water	<i>SDL</i>	Serial Dilution

## QC Sample Type Explanations

Blanks	Verifies that there is no or minimal contamination in the prep method or calibration procedure.
Control Samples	Verifies the accuracy of the method, including the prep procedure.
Duplicates	Verifies the precision of the instrument and/or method.
Spikes/Fortified Matrix	Determines sample matrix interferences, if any.
Standard	Verifies the validity of the calibration.

## ACZ Qualifiers (Qual)

<b>B</b>	Analyte concentration detected at a value between MDL and PQL. The associated value is an estimated quantity.
<b>H</b>	Analysis exceeded method hold time. pH is a field test with an immediate hold time.
<b>L</b>	Target analyte response was below the laboratory defined negative threshold.
<b>U</b>	The material was analyzed for, but was not detected above the level of the associated value. The associated value is either the sample quantitation limit or the sample detection limit.

## Method References

- (1) EPA 600/4-83-020. Methods for Chemical Analysis of Water and Wastes, March 1983.
- (2) EPA 600/R-93-100. Methods for the Determination of Inorganic Substances in Environmental Samples, August 1993.
- (3) EPA 600/R-94-111. Methods for the Determination of Metals in Environmental Samples - Supplement I, May 1994.
- (4) EPA SW-846. Test Methods for Evaluating Solid Waste.
- (5) Standard Methods for the Examination of Water and Wastewater.

## Comments

- (1) QC results calculated from raw data. Results may vary slightly if the rounded values are used in the calculations.
- (2) Soil, Sludge, and Plant matrices for Inorganic analyses are reported on a dry weight basis.
- (3) Animal matrices for Inorganic analyses are reported on an "as received" basis.
- (4) An asterisk in the "XQ" column indicates there is an extended qualifier and/or certification qualifier associated with the result.
- (5) If the MDL equals the PQL or the MDL column is omitted, the PQL is the reporting limit.

For a complete list of ACZ's Extended Qualifiers, please click:

<http://www.acz.com/public/extquallist.pdf>

**Stewart Environmental Consultants, Inc.**ACZ Project ID: **L38586**

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
L38586-01	NG427972	Carbon, total organic (TOC)	SM5310B	Q5	Sample received with inadequate chemical preservation. Additional preservation performed by the laboratory.

**Stewart Environmental Consultants, Inc.**

ACZ Project ID: **L38586**

No certification qualifiers associated with this analysis

**Stewart Environmental Consultants, Inc.**

ACZ Project ID: L38586

Date Received: 07/20/2017 11:33

Received By:

Date Printed: 7/20/2017

**Receipt Verification**

	YES	NO	NA
1) Is a foreign soil permit included for applicable samples?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
2) Is the Chain of Custody form or other directive shipping papers present?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3) Does this project require special handling procedures such as CLP protocol?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
4) Are any samples NRC licensable material?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
5) If samples are received past hold time, proceed with requested short hold time analyses?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6) Is the Chain of Custody form complete and accurate?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7) Were any changes made to the Chain of Custody form prior to ACZ receiving the samples?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

**Samples/Containers**

	YES	NO	NA
8) Are all containers intact and with no leaks?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9) Are all labels on containers and are they intact and legible?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
10) Do the sample labels and Chain of Custody form match for Sample ID, Date, and Time?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
11) For preserved bottle types, was the pH checked and within limits? <sup>1</sup> L38586-01 Container B1864793 (YELLOW GLASS): Added 2 mls sulfuric acid to the sub-sample to adjust the pH to the appropriate range.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
12) Is there sufficient sample volume to perform all requested work?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
13) Is the custody seal intact on all containers?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
14) Are samples that require zero headspace acceptable?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
15) Are all sample containers appropriate for analytical requirements?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
16) Is there an Hg-1631 trip blank present?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
17) Is there a VOA trip blank present?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
18) Were all samples received within hold time?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

**Chain of Custody Related Remarks**

**Client Contact Remarks**

**Shipping Containers**

Cooler Id	Temp (°C)	Temp Criteria (°C)	Rad (µR/Hr)	Custody Seal Intact?
4413	0.3	<=6.0	15	N/A

Was ice present in the shipment container(s)?

Yes - Wet ice was present in the shipment container(s).

Client must contact an ACZ Project Manager if analysis should not proceed for samples received outside of their thermal preservation acceptance criteria.



**Stewart Environmental Consultants, Inc.**

ACZ Project ID: L38586

Date Received: 07/20/2017 11:33

Received By:

Date Printed: 7/20/2017

<sup>1</sup> The preservation of the following bottle types is not checked at sample receipt: Orange (oil and grease), Purple (total cyanide), Pink (dissolved cyanide), Brown (arsenic speciation), Sterile (fecal coliform), EDTA (sulfite), HCl preserved vial (organics), Na<sub>2</sub>S<sub>2</sub>O<sub>3</sub> preserved vial (organics), and HG-1631 (total/dissolved mercury by method 1631).


 CI L38586 Chain of Custody **RECORD**

 STEWART ENVIRONMENTAL CONSULTANTS, INC.  
 3801 Automation Way, Suite 200, Fort Collins, CO 80525

L38586

Batch:

Telephone: (970) 226-5500

Facsimile: (

PAGE \_\_\_\_ OF \_\_\_\_

EC USE ONLY								Name: <u>James Stewart</u>	
Client No.	CLIENT: <b>Stratus Companies - ACZ</b>							Signature: <u>[Signature]</u>	
Sample No.	SAMPLE COLLECTION INFO			CLIENT SAMPLE IDENTIFICATION	Matrix Type	QC Report Needed	Total No. of Cont.	ANALYSES REQUESTED	
	Date	Time	Grab / Comp						
<b>S10-</b>									
	7-17-17	13:00		MW-15	WW		1	<del>Phenols</del> Total Organic Carbon Method 8270 (all normal compounds, including those below) <del>Benzy/Butyl Phthalate</del> <del>Bis(2-ethylhexyl) phthalate</del> <del>Di-n-butyl Phthalate</del> <del>Diethyl Phthalate</del> <del>Dimethyl Phthalate</del> <del>Di-n-octyl Phthalate</del> 1,4-Dioxane Benzoic Acid Bencyl alcohol 2-Methylphenol	
Compliance samples may require you to report the temperature of samples as they arrive in the laboratory. Would you like the temperature of samples recorded upon receipt by the Leaving this field blank implies that the incoming temperature is not requested.									
RELINQUISHED BY <u>[Signature]</u>		DATE / TIME 7-19-17 14:30	Received by <u>CTF 7/19/17</u>	Date / Time 1430	REQUESTED COMPLETION DATE			REPORT TO:	PHONE:
Relinquished by <u>CTF 7/19/17</u>		Date / Time 1630	Received by <u>Ben 7/20/17</u>	Date / Time 1133	MATRIX TYPE WW = waste water DW = drinking water L = Liquid S = soil SL = sludge A = Air SD = Solid CDPHE REPORT REQUIRED			CLIENT:	FAX:
Relinquished by		Date / Time	Received by	Date / Time				ADDRESS:	
								CITY, STATE ZIP:	
Database Entry By		Date			PWSID #			INVOICE TO:	
					Sample Kit Sent? <u>Yes / No</u>			ADDRESS:	
								CITY, STATE ZIP:	

August 04, 2017

## Report to:

Trevor Mueller  
Stewart Environmental Consultants, Inc.  
2600 Canton Ct.  
Unit C  
Fort Collins, CO 80525

## Bill to:

Accounts Payable  
Stewart Environmental Consultants, Inc.  
2600 Canton Ct.  
Unit C  
Fort Collins, CO 80525

cc: Trevor Mueller

## Project ID:

ACZ Project ID: L38419

## Trevor Mueller:

Enclosed are the analytical results for sample(s) submitted to ACZ Laboratories, Inc. (ACZ) on July 13, 2017. This project has been assigned to ACZ's project number, L38419. Please reference this number in all future inquiries.

All analyses were performed according to ACZ's Quality Assurance Plan. The enclosed results relate only to the samples received under L38419. Each section of this report has been reviewed and approved by the appropriate Laboratory Supervisor, or a qualified substitute.

Except as noted, the test results for the methods and parameters listed on ACZ's current NELAC certificate letter (#ACZ) meet all requirements of NELAC.

This report shall be used or copied only in its entirety. ACZ is not responsible for the consequences arising from the use of a partial report.

All samples and sub-samples associated with this project will be disposed of after September 03, 2017. If the samples are determined to be hazardous, additional charges apply for disposal (typically \$11/sample). If you would like the samples to be held longer than ACZ's stated policy or to be returned, please contact your Project Manager or Customer Service Representative for further details and associated costs. ACZ retains analytical raw data reports for ten years.

If you have any questions or other needs, please contact your Project Manager.



Sue Webber has reviewed and  
approved this report.



**Stewart Environmental Consultants, Inc.**

Project ID:

Sample ID: MW-16

ACZ Sample ID: **L38419-01**

Date Sampled: 07/12/17 13:40

Date Received: 07/13/17

Sample Matrix: Waste Water

**Wet Chemistry**

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Carbon, total organic (TOC)	SM5310B	20		U	*	mg/L	20	100	08/01/17 11:00	bce

**Arizona license number: AZ0102**

**Report Header Explanations**

<i>Batch</i>	A distinct set of samples analyzed at a specific time
<i>Found</i>	Value of the QC Type of interest
<i>Limit</i>	Upper limit for RPD, in %.
<i>Lower</i>	Lower Recovery Limit, in % (except for LCSS, mg/Kg)
<i>MDL</i>	Method Detection Limit. Same as Minimum Reporting Limit unless omitted or equal to the PQL (see comment #5). Allows for instrument and annual fluctuations.
<i>PCN/SCN</i>	A number assigned to reagents/standards to trace to the manufacturer's certificate of analysis
<i>PQL</i>	Practical Quantitation Limit. Synonymous with the EPA term "minimum level".
<i>QC</i>	True Value of the Control Sample or the amount added to the Spike
<i>Rec</i>	Recovered amount of the true value or spike added, in % (except for LCSS, mg/Kg)
<i>RPD</i>	Relative Percent Difference, calculation used for Duplicate QC Types
<i>Upper</i>	Upper Recovery Limit, in % (except for LCSS, mg/Kg)
<i>Sample</i>	Value of the Sample of interest

**QC Sample Types**

<i>AS</i>	Analytical Spike (Post Digestion)	<i>LCSWD</i>	Laboratory Control Sample - Water Duplicate
<i>ASD</i>	Analytical Spike (Post Digestion) Duplicate	<i>LFB</i>	Laboratory Fortified Blank
<i>CCB</i>	Continuing Calibration Blank	<i>LFM</i>	Laboratory Fortified Matrix
<i>CCV</i>	Continuing Calibration Verification standard	<i>LFMD</i>	Laboratory Fortified Matrix Duplicate
<i>DUP</i>	Sample Duplicate	<i>LRB</i>	Laboratory Reagent Blank
<i>ICB</i>	Initial Calibration Blank	<i>MS</i>	Matrix Spike
<i>ICV</i>	Initial Calibration Verification standard	<i>MSD</i>	Matrix Spike Duplicate
<i>ICSAB</i>	Inter-element Correction Standard - A plus B solutions	<i>PBS</i>	Prep Blank - Soil
<i>LCSS</i>	Laboratory Control Sample - Soil	<i>PBW</i>	Prep Blank - Water
<i>LCSSD</i>	Laboratory Control Sample - Soil Duplicate	<i>PQV</i>	Practical Quantitation Verification standard
<i>LCSW</i>	Laboratory Control Sample - Water	<i>SDL</i>	Serial Dilution

**QC Sample Type Explanations**

Blanks	Verifies that there is no or minimal contamination in the prep method or calibration procedure.
Control Samples	Verifies the accuracy of the method, including the prep procedure.
Duplicates	Verifies the precision of the instrument and/or method.
Spikes/Fortified Matrix	Determines sample matrix interferences, if any.
Standard	Verifies the validity of the calibration.

**ACZ Qualifiers (Qual)**

<b>B</b>	Analyte concentration detected at a value between MDL and PQL. The associated value is an estimated quantity.
<b>H</b>	Analysis exceeded method hold time. pH is a field test with an immediate hold time.
<b>L</b>	Target analyte response was below the laboratory defined negative threshold.
<b>U</b>	The material was analyzed for, but was not detected above the level of the associated value. The associated value is either the sample quantitation limit or the sample detection limit.

**Method References**

- (1) EPA 600/4-83-020. Methods for Chemical Analysis of Water and Wastes, March 1983.
- (2) EPA 600/R-93-100. Methods for the Determination of Inorganic Substances in Environmental Samples, August 1993.
- (3) EPA 600/R-94-111. Methods for the Determination of Metals in Environmental Samples - Supplement I, May 1994.
- (4) EPA SW-846. Test Methods for Evaluating Solid Waste.
- (5) Standard Methods for the Examination of Water and Wastewater.

**Comments**

- (1) QC results calculated from raw data. Results may vary slightly if the rounded values are used in the calculations.
- (2) Soil, Sludge, and Plant matrices for Inorganic analyses are reported on a dry weight basis.
- (3) Animal matrices for Inorganic analyses are reported on an "as received" basis.
- (4) An asterisk in the "XQ" column indicates there is an extended qualifier and/or certification qualifier associated with the result.
- (5) If the MDL equals the PQL or the MDL column is omitted, the PQL is the reporting limit.

For a complete list of ACZ's Extended Qualifiers, please click:

<http://www.acz.com/public/extquallist.pdf>

Stewart Environmental Consultants, Inc.

ACZ Project ID: **L38419**

**Carbon, total organic (TOC)**

SM5310B

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
<b>WG427972</b>													
WG427972ICV	ICV	08/01/17 11:00	WI170707-1	100		104	mg/L	104	90	110			
WG427972ICB	ICB	08/01/17 11:00				U	mg/L		-3	3			
WG427972LFB	LFB	08/01/17 11:00	WI170531-4	50		49.2	mg/L	98	90	110			
L38390-01DUP	DUP	08/01/17 11:00			87.3	91.6	mg/L				5	20	RA
L38391-01AS	AS	08/01/17 11:00	WI170531-4	1000	29.9	1020	mg/L	99	90	110			

**Stewart Environmental Consultants, Inc.**ACZ Project ID: **L38419**

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
L38419-01	WG427972	Carbon, total organic (TOC)	SM5310B	DD	Sample required dilution due to matrix color or odor.
			SM5310B	Q5	Sample received with inadequate chemical preservation. Additional preservation performed by the laboratory.
			SM5310B	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).

**Stewart Environmental Consultants, Inc.**

Project ID:

Sample ID: MW-16

ACZ Sample ID: **L38419-01**

Date Sampled: 07/12/17 13:40

Date Received: 07/13/17

Sample Matrix: Waste Water

**Base Neutral Acid Extractables by GC/MS**

Analysis Method: **M8270C GC/MS**

Extract Method: **M3520C**

Workgroup: **WG427395**

Analyst: itm

Extract Date: 07/17/17 13:39

Analysis Date: 07/24/17 12:19

Compound	CAS	Result	QUAL	Dilution	XQ	Units	MDL	PQL
1,2,4-Trichlorobenzene	120-82-1	35	U	1.2	*	ug/L	2	10
1,2-Dichlorobenzene	95-50-1		U	1.2	*	ug/L	2	10
1,3-Dichlorobenzene	541-73-1		U	1.2	*	ug/L	2	10
1,4-Dichlorobenzene	106-46-7		U	1.2	*	ug/L	2	10
1,4-Dioxane	123-91-1			1.2	*	ug/L	2	10
2,4,5-Trichlorophenol	95-95-4		U	1.2	*	ug/L	10	60
2,4,6-Trichlorophenol	88-06-2		U	1.2	*	ug/L	2	10
2,4-Dichlorophenol	120-83-2		U	1.2	*	ug/L	2	10
2,4-Dimethylphenol	105-67-9		U	1.2	*	ug/L	5	20
2,4-Dinitrophenol	51-28-5		U	1.2	*	ug/L	20	60
2,4-Dinitrotoluene	121-14-2		U	1.2	*	ug/L	2	10
2,6-Dinitrotoluene	606-20-8		U	1.2	*	ug/L	10	60
2-Chloronaphthalene	91-58-7		U	1.2	*	ug/L	2	10
2-Chlorophenol	95-57-8		U	1.2	*	ug/L	2	10
2-Methylnaphthalene	91-57-6		U	1.2	*	ug/L	2	10
2-Methylphenol	95-48-7		U	1.2	*	ug/L	2	10
2-Nitroaniline	88-74-4		U	1.2	*	ug/L	10	60
2-Nitrophenol	88-75-5		U	1.2	*	ug/L	5	20
3- & 4-Methylphenol	1319-77-3		U	1.2	*	ug/L	5	20
3,3-Dichlorobenzidine	91-94-1		U	1.2	*	ug/L	20	60
3-Nitroaniline	99-09-2		U	1.2	*	ug/L	10	60
4,6-Dinitro-2-methylphenol	534-52-1		U	1.2	*	ug/L	10	60
4-Bromophenyl phenyl ether	101-55-3		U	1.2	*	ug/L	2	10
4-Chloro-3-methylphenol	59-50-7		U	1.2	*	ug/L	2	10
4-Chloroaniline	106-47-8		U	1.2	*	ug/L	2	10
4-Chlorophenyl phenyl ether	7005-72-3		U	1.2	*	ug/L	2	10
4-Nitroaniline	100-01-6		U	1.2	*	ug/L	10	60
4-Nitrophenol	100-02-07		U	1.2	*	ug/L	10	60
Acenaphthene	83-32-9		U	1.2	*	ug/L	2	10
Acenaphthylene	208-96-8		U	1.2	*	ug/L	2	10
Aniline	62-53-3	23	U	1.2	*	ug/L	10	60
Anthracene	120-12-7		U	1.2	*	ug/L	2	10
Azobenzene	103-33-3		U	1.2	*	ug/L	10	60
Benzidine	92-87-5		U	1.2	*	ug/L	5	20
Benzo(a)anthracene	56-55-3		U	1.2	*	ug/L	2	10
Benzo(a)pyrene	50-32-8		U	1.2	*	ug/L	2	10
Benzo(b)fluoranthene	205-99-2		U	1.2	*	ug/L	2	10
Benzo(g,h,i)perylene	191-24-2			1.2	*	ug/L	2	10
Benzo(k)fluoranthene	207-08-9		U	1.2	*	ug/L	2	10
Benzoic Acid	65-85-0		U	1.2	*	ug/L	20	60
Benzyl alcohol	100-51-6		U	1.2	*	ug/L	2	10



**Stewart Environmental Consultants, Inc.**

Project ID:

Sample ID: MW-16

ACZ Sample ID: **L38419-01**

Date Sampled: 07/12/17 13:40

Date Received: 07/13/17

Sample Matrix: Waste Water

Bis(2-chloroethoxy)methane	111-91-1		U	1.2	*	ug/L	2	10
Bis(2-chloroethyl) ether	111-44-4		U	1.2	*	ug/L	2	10
Bis(2-chloroisopropyl) ether	108-60-1		U	1.2	*	ug/L	2	10
Bis(2-ethylhexyl) phthalate	117-81-7	6	J	1.2	*	ug/L	5	20
Butyl benzyl phthalate	85-68-7		U	1.2	*	ug/L	2	10
Chrysene	218-01-9		U	1.2	*	ug/L	2	10
Dibenzo(a,h)anthracene	53-70-3		U	1.2	*	ug/L	2	10
Dibenzofuran	132-64-9		U	1.2	*	ug/L	2	10
Diethylphthalate	84-66-2		U	1.2	*	ug/L	2	10
Dimethyl phthalate	131-11-3		U	1.2	*	ug/L	2	10
Di-n-butyl phthalate	84-74-2		U	1.2	*	ug/L	2	10
Di-n-octyl phthalate	117-84-0	5	J	1.2	*	ug/L	2	10
Fluoranthene	206-44-0		U	1.2	*	ug/L	2	10
Fluorene	86-73-7		U	1.2	*	ug/L	2	10
Hexachlorobenzene	118-74-1		U	1.2	*	ug/L	2	10
Hexachlorobutadiene	87-68-3		U	1.2	*	ug/L	2	10
Hexachlorocyclopentadiene	77-47-4		U	1.2	*	ug/L	5	20
Hexachloroethane	67-72-1		U	1.2	*	ug/L	2	10
Indeno(1,2,3-cd)pyrene	193-39-5	10		1.2	*	ug/L	2	10
Isophorone	78-59-1		U	1.2	*	ug/L	2	10
Naphthalene	91-20-3		U	1.2	*	ug/L	2	10
Nitrobenzene	98-95-3		U	1.2	*	ug/L	2	10
N-Nitrosodimethylamine	62-75-9		U	1.2	*	ug/L	10	60
N-Nitrosodi-n-propylamine	621-64-7		U	1.2	*	ug/L	2	10
N-Nitrosodiphenylamine	86-30-6		U	1.2	*	ug/L	2	10
Pentachlorophenol	87-86-5		U	1.2	*	ug/L	10	60
Phenanthrene	85-01-8		U	1.2	*	ug/L	2	10
Phenol	108-95-2		U	1.2	*	ug/L	5	20
Pyrene	129-00-0		U	1.2	*	ug/L	2	10
Surrogate Recoveries	CAS	% Recovery		Dilution	XQ	Units	LCL	UCL
2,4,6-Tribromophenol	118-79-6	101.4		1.2	*	%	40	125
2-Fluorobiphenyl	321-60-8	84.8		1.2	*	%	50	110
2-Fluorophenol	367-12-4	60.1		1.2	*	%	54	100
Nitrobenzene-d5	4165-60-0	76.2		1.2	*	%	40	110
Phenol-d6	13127-88-3	77.2		1.2	*	%	47	113
Terphenyl-d14	1718-51-0	68.9		1.2	*	%	50	135

Arizona license number: AZ0102

## Report Header Explanations

<i>Batch</i>	A distinct set of samples analyzed at a specific time
<i>Found</i>	Value of the QC Type of interest
<i>Limit</i>	Upper limit for RPD, in %.
<i>Lower</i>	Lower Recovery Limit, in % (except for LCSS, mg/Kg)
<i>LCL</i>	Lower Control Limit
<i>MDL</i>	Method Detection Limit. Same as Minimum Reporting Limit unless omitted or equal to the PQL (see comment #4) Allows for instrument and annual fluctuations.
<i>PCN/SCN</i>	A number assigned to reagents/standards to trace to the manufacturer's certificate of analysis
<i>PQL</i>	Practical Quantitation Limit. Synonymous with the EPA term "minimum level".
<i>QC</i>	True Value of the Control Sample or the amount added to the Spike
<i>Rec</i>	Amount of the true value or spike added recovered, in % (except for LCSS, mg/Kg)
<i>RPD</i>	Relative Percent Difference, calculation used for Duplicate QC Types
<i>Upper</i>	Upper Recovery Limit, in % (except for LCSS, mg/Kg)
<i>UCL</i>	Upper Control Limit
<i>Sample</i>	Value of the Sample of interest

## QC Sample Types

<i>SURR</i>	Surrogate	<i>LFM</i>	Laboratory Fortified Matrix
<i>INTS</i>	Internal Standard	<i>LFMD</i>	Laboratory Fortified Matrix Duplicate
<i>DUP</i>	Sample Duplicate	<i>LRB</i>	Laboratory Reagent Blank
<i>LCSS</i>	Laboratory Control Sample - Soil	<i>MS/MSD</i>	Matrix Spike/Matrix Spike Duplicate
<i>LCSW</i>	Laboratory Control Sample - Water	<i>PBS</i>	Prep Blank - Soil
<i>LFB</i>	Laboratory Fortified Blank	<i>PBW</i>	Prep Blank - Water

## QC Sample Type Explanations

Blanks	Verifies that there is no or minimal contamination in the prep method or calibration procedure.
Control Samples	Verifies the accuracy of the method, including the prep procedure.
Duplicates	Verifies the precision of the instrument and/or method.
Spikes/Fortified Matrix	Determines sample matrix interferences, if any.

## ACZ Qualifiers (Qual)

B	Analyte concentration detected at a value between MDL and PQL. The associated value is an estimated quantity.
O	Analyte concentration is estimated due to result exceeding calibration range.
H	Analysis exceeded method hold time. pH is a field test with an immediate hold time.
J	Analyte concentration detected at a value between MDL and PQL. The associated value is an estimated quantity.
L	Target analyte response was below the laboratory defined negative threshold.
U	The material was analyzed for, but was not detected above the level of the associated value. The associated value is either the sample quantitation limit or the sample detection limit.

## Method References

- (1) EPA 600/4-83-020. Methods for Chemical Analysis of Water and Wastes, March 1983.
- (2) EPA 600/4-90/020. Methods for the Determination of Organic Compounds in Drinking Water (I), July 1990.
- (3) EPA 600/R-92/129. Methods for the Determination of Organic Compounds in Drinking Water (II), July 1990.
- (4) EPA SW-846. Test Methods for Evaluating Solid Waste.
- (5) Standard Methods for the Examination of Water and Wastewater.

## Comments

- (1) QC results calculated from raw data. Results may vary slightly if the rounded values are used in the calculations.
- (2) Excluding Oil & Grease, solid & biological matrices for organic analyses are reported on a wet weight basis.
- (3) An asterisk in the "XQ" column indicates there is an extended qualifier and/or certification qualifier associated with the result.
- (4) If the MDL equals the PQL or the MDL column is omitted, the PQL is the reporting limit.

For a complete list of ACZ's Extended Qualifiers, please click:

<http://www.acz.com/public/extquallist.pdf>

Stewart Environmental Consultants, Inc.

ACZ Project ID: L38419

### Base Neutral Acid Extractables by GC/MS

M8270C GC/MS

WG427395

MS	Sample ID: L38390-01MS			PCN/SCN: OPBNA170523-1				Analyzed:		07/21/17 15:50	
Compound	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual	
1,2,4-TRICHLOROBENZENE	50013	U	25	ug/L	53.0	35	105				
1,4-DICHLOROBENZENE	50013	U	28.6	ug/L	61.0	30	100				
2,4-DINITROTOLUENE	50013	U	34.9	ug/L	74.0	50	120				
2-CHLOROPHENOL	75080	U	50.1	ug/L	71.0	35	105				
4-CHLORO-3-METHYLPHENOL	75040	U	61.1	ug/L	86.0	45	110				
4-NITROPHENOL	75120	U	67	ug/L	95.0	0	125				
ACENAPHTHENE	50007	U	24.5	ug/L	52.0	45	110				
N-NITROSODI-N-PROPYLAMINE	50027	U	35.7	ug/L	76.0	35	130				
PENTACHLOROPHENOL	75040	U	31	ug/L	44.0	40	115				
PHENOL	75060	U	52.7	ug/L	74.0	0	115				
PYRENE	50003	U	U	ug/L	0.0	50	130			M2	
2,4,6-TRIBROMOPHENOL (surr)				%	77.9	40	125				
2-FLUOROBIPHENYL (surr)				%	61.0	50	110				
2-FLUOROPHENOL (surr)				%	71.0	54	100				
NITROBENZENE-D5 (surr)				%	79.2	40	110				
PHENOL-D6 (surr)				%	83.8	47	113				
TERPHENYL-D14 (surr)				%	10.1	50	135			S6	

DUP	Sample ID: L38391-01DUP				Analyzed: 07/21/17 16:57					
Compound	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
1,2,4-TRICHLOROBENZENE		U	U	ug/L				0	20	RA
1,2-DICHLOROBENZENE		U	U	ug/L				0	20	RA
1,3-DICHLOROBENZENE		U	U	ug/L				0	20	RA
1,4-DICHLOROBENZENE		U	4	ug/L				200	20	RA
1,4-DIOXANE		12	12.4	ug/L				3	20	RA
2,4,5-TRICHLOROPHENOL		U	U	ug/L				0	20	RA
2,4,6-TRICHLOROPHENOL		U	U	ug/L				0	20	RA
2,4-DICHLOROPHENOL		U	U	ug/L				0	20	RA
2,4-DIMETHYLPHENOL		U	U	ug/L				0	20	RA
2,4-DINITROPHENOL		U	U	ug/L				0	20	RA
2,4-DINITROTOLUENE		U	U	ug/L				0	20	RA
2,6-DINITROTOLUENE		U	U	ug/L				0	20	RA
2-CHLORONAPHTHALENE		U	U	ug/L				0	20	RA
2-CHLOROPHENOL		U	U	ug/L				0	20	RA
2-METHYLNAPHTHALENE		U	U	ug/L				0	20	RA
2-METHYLPHENOL		U	U	ug/L				0	20	RA
2-NITROANILINE		U	U	ug/L				0	20	RA
2-NITROPHENOL		U	U	ug/L				0	20	RA
3- & 4-METHYLPHENOL		U	U	ug/L				0	20	RA
3,3-DICHLOROBENZIDINE		U	U	ug/L				0	20	RA
3-NITROANILINE		U	U	ug/L				0	20	RA
4,6-DINITRO-2-METHYLPHENOL		U	U	ug/L				0	20	RA
4-BROMOPHENYL PHENYL ETHER		U	U	ug/L				0	20	RA
4-CHLORO-3-METHYLPHENOL		U	U	ug/L				0	20	RA

Stewart Environmental Consultants, Inc.

ACZ Project ID: L38419

4-CHLOROANILINE	U	U	ug/L	0	20	RA
4-CHLOROPHENYL PHENYL ETHER	U	U	ug/L	0	20	RA
4-NITROANILINE	U	U	ug/L	0	20	RA
4-NITROPHENOL	U	U	ug/L	0	20	RA
ACENAPHTHENE	U	U	ug/L	0	20	RA
ACENAPHTHYLENE	U	U	ug/L	0	20	RA
ANILINE	U	U	ug/L	0	20	RA
ANTHRACENE	U	U	ug/L	0	20	RA
AZOBENZENE	U	U	ug/L	0	20	RA
BENZIDINE	U	U	ug/L	0	20	RA
BENZO(A)ANTHRACENE	U	U	ug/L	0	20	RA
BENZO(A)PYRENE	U	U	ug/L	0	20	RA
BENZO(B)FLUORANTHENE	U	U	ug/L	0	20	RA
BENZO(G,H,I)PERYLENE	U	U	ug/L	0	20	RA
BENZO(K)FLUORANTHENE	U	U	ug/L	0	20	RA
BENZOIC ACID	U	U	ug/L	0	20	RA
BENZYL ALCOHOL	U	U	ug/L	0	20	RA
BIS(2-CHLOROETHOXY)METHANE	U	U	ug/L	0	20	RA
BIS(2-CHLOROETHYL) ETHER	U	U	ug/L	0	20	RA
BIS(2-CHLOROISOPROPYL) ETHER	U	U	ug/L	0	20	RA
BIS(2-ETHYLHEXYL) PHTHALATE	U	U	ug/L	0	20	RA
BUTYL BENZYL PHTHALATE	U	U	ug/L	0	20	RA
CHRYSENE	U	U	ug/L	0	20	RA
DIBENZO(A,H)ANTHRACENE	U	U	ug/L	0	20	RA
DIBENZOFURAN	U	U	ug/L	0	20	RA
DIETHYLPHTHALATE	U	U	ug/L	0	20	RA
DIMETHYL PHTHALATE	U	U	ug/L	0	20	RA
DI-N-BUTYL PHTHALATE	U	U	ug/L	0	20	RA
DI-N-OCTYL PHTHALATE	U	U	ug/L	0	20	RA
FLUORANTHENE	U	U	ug/L	0	20	RA
FLUORENE	U	U	ug/L	0	20	RA
HEXACHLOROBENZENE	U	U	ug/L	0	20	RA
HEXACHLOROBUTADIENE	U	U	ug/L	0	20	RA
HEXACHLOROCYCLOPENTADIENE	U	U	ug/L	0	20	RA
HEXACHLOROETHANE	U	U	ug/L	0	20	RA
INDENO(1,2,3-CD)PYRENE	U	U	ug/L	0	20	RA
ISOPHORONE	U	U	ug/L	0	20	RA
NAPHTHALENE	U	U	ug/L	0	20	RA
NITROBENZENE	U	U	ug/L	0	20	RA
N-NITROSODIMETHYLAMINE	U	U	ug/L	0	20	RA
N-NITROSODI-N-PROPYLAMINE	U	U	ug/L	0	20	RA
N-NITROSODIPHENYLAMINE	U	U	ug/L	0	20	RA
PENTACHLOROPHENOL	U	U	ug/L	0	20	RA
PHENANTHRENE	U	U	ug/L	0	20	RA
PHENOL	U	U	ug/L	0	20	RA
PYRENE	U	U	ug/L	0	20	RA
2,4,6-TRIBROMOPHENOL (surr)			%	94.5	40	125
2-FLUOROBIPHENYL (surr)			%	76.0	50	110
2-FLUOROPHENOL (surr)			%	71.5	54	100

Stewart Environmental Consultants, Inc.

ACZ Project ID: **L38419**

NITROBENZENE-D5 (surr)	%	77.3	40	110	
PHENOL-D6 (surr)	%	83.6	47	113	
TERPHENYL-D14 (surr)	%	20.4	50	135	S6

LCSW		Sample ID: WG426931LCSW		PCN/SCN: OPBNA170523-1			Analyzed: 07/21/17 14:10			
Compound	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
1,2,4-TRICHLOROBENZENE	50013		33.2	ug/L	66.0	35	105			
1,4-DICHLOROBENZENE	50013		31.7	ug/L	63.0	30	100			
2,4-DINITROTOLUENE	50013		43.3	ug/L	87.0	50	120			
2-CHLOROPHENOL	75080		53.5	ug/L	71.0	35	105			
4-CHLORO-3-METHYLPHENOL	75040		58.4	ug/L	78.0	45	110			
4-NITROPHENOL	75120		59	ug/L	79.0	0	125			
ACENAPHTHENE	50007		38	ug/L	76.0	45	110			
N-NITROSODI-N-PROPYLAMINE	50027		38.4	ug/L	77.0	35	130			
PENTACHLOROPHENOL	75040		55	ug/L	73.0	40	115			
PHENOL	75060		53.4	ug/L	71.0	0	115			
PYRENE	50003		41.7	ug/L	83.0	50	130			
2,4,6-TRIBROMOPHENOL (surr)				%	90.8	40	125			
2-FLUOROBIPHENYL (surr)				%	79.8	50	110			
2-FLUOROPHENOL (surr)				%	72.8	54	100			
NITROBENZENE-D5 (surr)				%	82.1	40	110			
PHENOL-D6 (surr)				%	80.5	47	113			
TERPHENYL-D14 (surr)				%	95.3	50	135			

LCSWD		Sample ID: WG426931LCSWD		PCN/SCN: OPBNA170523-1			Analyzed: 07/21/17 14:44			
Compound	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
1,2,4-TRICHLOROBENZENE	50013		35.1	ug/L	70.0	35	105	6	20	
1,4-DICHLOROBENZENE	50013		34.5	ug/L	69.0	30	100	8	20	
2,4-DINITROTOLUENE	50013		44.1	ug/L	88.0	50	120	2	20	
2-CHLOROPHENOL	75080		56.5	ug/L	75.0	35	105	5	20	
4-CHLORO-3-METHYLPHENOL	75040		60	ug/L	80.0	45	110	3	20	
4-NITROPHENOL	75120		58	ug/L	77.0	0	125	2	20	
ACENAPHTHENE	50007		40.4	ug/L	81.0	45	110	6	20	
N-NITROSODI-N-PROPYLAMINE	50027		40.6	ug/L	81.0	35	130	6	20	
PENTACHLOROPHENOL	75040		56	ug/L	75.0	40	115	2	20	
PHENOL	75060		54.6	ug/L	73.0	0	115	2	20	
PYRENE	50003		42.6	ug/L	85.0	50	130	2	20	
2,4,6-TRIBROMOPHENOL (surr)				%	88.8	40	125			
2-FLUOROBIPHENYL (surr)				%	80.6	50	110			
2-FLUOROPHENOL (surr)				%	71.6	54	100			
NITROBENZENE-D5 (surr)				%	82.5	40	110			
PHENOL-D6 (surr)				%	77.1	47	113			
TERPHENYL-D14 (surr)				%	93.7	50	135			

PBW		Sample ID: WG426931PBW					Analyzed: 07/21/17 13:37			
Compound	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
1,2,4-TRICHLOROBENZENE			U	ug/L		-10	10			
1,2-DICHLOROBENZENE			U	ug/L		-10	10			
1,3-DICHLOROBENZENE			U	ug/L		-10	10			

**Stewart Environmental Consultants, Inc.**ACZ Project ID: **L38419**

1,4-DICHLOROBENZENE	U	ug/L	-10	10
1,4-DIOXANE	U	ug/L	-10	10
2,4,5-TRICHLOROPHENOL	U	ug/L	-50	50
2,4,6-TRICHLOROPHENOL	U	ug/L	-10	10
2,4-DICHLOROPHENOL	U	ug/L	-10	10
2,4-DIMETHYLPHENOL	U	ug/L	-20	20
2,4-DINITROPHENOL	U	ug/L	-50	50
2,4-DINITROTOLUENE	U	ug/L	-10	10
2,6-DINITROTOLUENE	U	ug/L	-50	50
2-CHLORONAPHTHALENE	U	ug/L	-10	10
2-CHLOROPHENOL	U	ug/L	-10	10
2-METHYLNAPHTHALENE	U	ug/L	-10	10
2-METHYLPHENOL	U	ug/L	-10	10
2-NITROANILINE	U	ug/L	-50	50
2-NITROPHENOL	U	ug/L	-20	20
3- & 4-METHYLPHENOL	U	ug/L	-20	20
3,3-DICHLOROBENZIDINE	U	ug/L	-50	50
3-NITROANILINE	U	ug/L	-50	50
4,6-DINITRO-2-METHYLPHENOL	U	ug/L	-50	50
4-BROMOPHENYL PHENYL ETHER	U	ug/L	-10	10
4-CHLORO-3-METHYLPHENOL	U	ug/L	-10	10
4-CHLOROANILINE	U	ug/L	-10	10
4-CHLOROPHENYL PHENYL ETHER	U	ug/L	-10	10
4-NITROANILINE	U	ug/L	-50	50
4-NITROPHENOL	U	ug/L	-50	50
ACENAPHTHENE	U	ug/L	-10	10
ACENAPHTHYLENE	U	ug/L	-10	10
ANILINE	U	ug/L	-50	50
ANTHRACENE	U	ug/L	-10	10
AZOBENZENE	U	ug/L	-50	50
BENZIDINE	U	ug/L	-20	20
BENZO(A)ANTHRACENE	U	ug/L	-10	10
BENZO(A)PYRENE	U	ug/L	-10	10
BENZO(B)FLUORANTHENE	U	ug/L	-10	10
BENZO(G,H,I)PERYLENE	U	ug/L	-10	10
BENZO(K)FLUORANTHENE	U	ug/L	-10	10
BENZOIC ACID	U	ug/L	-50	50
BENZYL ALCOHOL	U	ug/L	-10	10
BIS(2-CHLOROETHOXY)METHANE	U	ug/L	-10	10
BIS(2-CHLOROETHYL) ETHER	U	ug/L	-10	10
BIS(2-CHLOROISOPROPYL) ETHER	U	ug/L	-10	10
BIS(2-ETHYLHEXYL) PHTHALATE	U	ug/L	-20	20
BUTYL BENZYL PHTHALATE	U	ug/L	-10	10
CHRYSENE	U	ug/L	-10	10
DIBENZO(A,H)ANTHRACENE	U	ug/L	-10	10
DIBENZOFURAN	U	ug/L	-10	10
DIETHYLPHTHALATE	U	ug/L	-10	10
DIMETHYL PHTHALATE	U	ug/L	-10	10
DI-N-BUTYL PHTHALATE	U	ug/L	-10	10

**Stewart Environmental Consultants, Inc.**ACZ Project ID: **L38419**

DI-N-OCTYL PHTHALATE	U	ug/L	-10	10	
FLUORANTHENE	U	ug/L	-10	10	
FLUORENE	U	ug/L	-10	10	
HEXACHLOROBENZENE	U	ug/L	-10	10	
HEXACHLOROBUTADIENE	U	ug/L	-10	10	
HEXACHLOROCYCLOPENTADIENE	U	ug/L	-20	20	
HEXACHLOROETHANE	U	ug/L	-10	10	
INDENO(1,2,3-CD)PYRENE	U	ug/L	-10	10	
ISOPHORONE	U	ug/L	-10	10	
NAPHTHALENE	U	ug/L	-10	10	
NITROBENZENE	U	ug/L	-10	10	
N-NITROSODIMETHYLAMINE	U	ug/L	-50	50	
N-NITROSODI-N-PROPYLAMINE	U	ug/L	-10	10	
N-NITROSODIPHENYLAMINE	U	ug/L	-10	10	
PENTACHLOROPHENOL	U	ug/L	-50	50	
PHENANTHRENE	U	ug/L	-10	10	
PHENOL	U	ug/L	-20	20	
PYRENE	U	ug/L	-10	10	
2,4,6-TRIBROMOPHENOL (surr)		%	77.4	40	125
2-FLUOROBIPHENYL (surr)		%	74.9	50	110
2-FLUOROPHENOL (surr)		%	71.1	54	100
NITROBENZENE-D5 (surr)		%	77.2	40	110
PHENOL-D6 (surr)		%	77.3	47	113
TERPHENYL-D14 (surr)		%	91.2	50	135

ACZ Project ID: **L38419**

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
L38419-01	WG427395	*All Compounds*	M8270C GC/MS	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
		Pyrene	M8270C GC/MS	M2	Matrix spike recovery was low, the recovery of the associated control sample (LCS or LFB) was acceptable.



**Stewart Environmental Consultants, Inc.**

ACZ Project ID: **L38419**

**GC/MS**

The following parameters are not offered for certification or are not covered by NELAC certificate #ACZ.

1,4-Dioxane

M8270C GC/MS

**Stewart Environmental Consultants, Inc.**

ACZ Project ID: L38419

Date Received: 07/13/2017 10:20

Received By:

Date Printed: 7/13/2017

**Receipt Verification**

	YES	NO	NA
1) Is a foreign soil permit included for applicable samples?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
2) Is the Chain of Custody form or other directive shipping papers present?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3) Does this project require special handling procedures such as CLP protocol?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
4) Are any samples NRC licensable material?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
5) If samples are received past hold time, proceed with requested short hold time analyses?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6) Is the Chain of Custody form complete and accurate?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7) Were any changes made to the Chain of Custody form prior to ACZ receiving the samples?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

A change was made in the Analyses Requested Line 2 and Total No. of Cont. Line 1 section prior to ACZ custody.

**Samples/Containers**

	YES	NO	NA
8) Are all containers intact and with no leaks?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9) Are all labels on containers and are they intact and legible?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
10) Do the sample labels and Chain of Custody form match for Sample ID, Date, and Time?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
11) For preserved bottle types, was the pH checked and within limits? <sup>1</sup> L38419-01 Container B1861634 (YELLOW GLASS): Added 2 mls sulfuric acid to the sub-sample to adjust the pH to the appropriate range.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
12) Is there sufficient sample volume to perform all requested work?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
13) Is the custody seal intact on all containers?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
14) Are samples that require zero headspace acceptable?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
15) Are all sample containers appropriate for analytical requirements? L38419-01 : A Yellow Glass container not received and a new container created from the Amber .	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
16) Is there an Hg-1631 trip blank present?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
17) Is there a VOA trip blank present?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
18) Were all samples received within hold time?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

**Chain of Custody Related Remarks**

**Client Contact Remarks**

**Shipping Containers**

Cooler Id	Temp (°C)	Temp Criteria (°C)	Rad (µR/Hr)	Custody Seal Intact?
4003	1.2	<=6.0	13	Yes

**Stewart Environmental Consultants, Inc.**

ACZ Project ID: L38419

Date Received: 07/13/2017 10:20

Received By:

Date Printed: 7/13/2017

Was ice present in the shipment container(s)?

Yes - Wet ice was present in the shipment container(s).

Client must contact an ACZ Project Manager if analysis should not proceed for samples received outside of their thermal preservation acceptance criteria.

<sup>1</sup> The preservation of the following bottle types is not checked at sample receipt: Orange (oil and grease), Purple (total cyanide), Pink (dissolved cyanide), Brown (arsenic speciation), Sterile (fecal coliform), EDTA (sulfite), HCl preserved vial (organics), Na<sub>2</sub>S<sub>2</sub>O<sub>3</sub> preserved vial (organics), and HG-1631 (total/dissolved mercury by method 1631).



**L38419 Chain of Custody**

## Y RECORD

**STEWART ENVIRONMENTAL CONSULTANTS, INC.**  
**3801 Automation Way, Suite 200, Fort Collins, CO 80525**

**Batch:**

**Telephone: (970) 226-5500**

Facsimile: ( ) PAGE OF

Page 18 of 18

[illegible]

-Toc sample received unpreserved

L38419-1708041321

August 04, 2017

**Report to:**

Trevor Mueller

Stewart Environmental Consultants, Inc.

2600 Canton Ct.

Unit C

Fort Collins, CO 80525

**Bill to:**

Accounts Payable

Stewart Environmental Consultants, Inc.

2600 Canton Ct.

Unit C

Fort Collins, CO 80525

cc: Trevor Mueller

**Project ID:**

ACZ Project ID: L38587

**Trevor Mueller:**

Enclosed are the analytical results for sample(s) submitted to ACZ Laboratories, Inc. (ACZ) on July 20, 2017. This project has been assigned to ACZ's project number, L38587. Please reference this number in all future inquiries.

All analyses were performed according to ACZ's Quality Assurance Plan. The enclosed results relate only to the samples received under L38587. Each section of this report has been reviewed and approved by the appropriate Laboratory Supervisor, or a qualified substitute.

Except as noted, the test results for the methods and parameters listed on ACZ's current NELAC certificate letter (#ACZ) meet all requirements of NELAC.

This report shall be used or copied only in its entirety. ACZ is not responsible for the consequences arising from the use of a partial report.

All samples and sub-samples associated with this project will be disposed of after September 03, 2017. If the samples are determined to be hazardous, additional charges apply for disposal (typically \$11/sample). If you would like the samples to be held longer than ACZ's stated policy or to be returned, please contact your Project Manager or Customer Service Representative for further details and associated costs. ACZ retains analytical raw data reports for ten years.

If you have any questions or other needs, please contact your Project Manager.



Sue Webber has reviewed and  
approved this report.



Stewart Environmental Consultants, Inc.

Project ID:

Sample ID: MW-16

ACZ Sample ID: **L38587-01**

Date Sampled: 07/17/17 13:30

Date Received: 07/20/17

Sample Matrix: Waste Water

## Wet Chemistry

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Carbon, total organic (TOC)	SM5310B	1	1.0	B		mg/L	1	5	08/01/17 11:00	bce

Arizona license number: AZ0102

**Report Header Explanations**

<i>Batch</i>	A distinct set of samples analyzed at a specific time
<i>Found</i>	Value of the QC Type of interest
<i>Limit</i>	Upper limit for RPD, in %.
<i>Lower</i>	Lower Recovery Limit, in % (except for LCSS, mg/Kg)
<i>MDL</i>	Method Detection Limit. Same as Minimum Reporting Limit unless omitted or equal to the PQL (see comment #5). Allows for instrument and annual fluctuations.
<i>PCN/SCN</i>	A number assigned to reagents/standards to trace to the manufacturer's certificate of analysis
<i>PQL</i>	Practical Quantitation Limit. Synonymous with the EPA term "minimum level".
<i>QC</i>	True Value of the Control Sample or the amount added to the Spike
<i>Rec</i>	Recovered amount of the true value or spike added, in % (except for LCSS, mg/Kg)
<i>RPD</i>	Relative Percent Difference, calculation used for Duplicate QC Types
<i>Upper</i>	Upper Recovery Limit, in % (except for LCSS, mg/Kg)
<i>Sample</i>	Value of the Sample of interest

**QC Sample Types**

<i>AS</i>	Analytical Spike (Post Digestion)	<i>LCSWD</i>	Laboratory Control Sample - Water Duplicate
<i>ASD</i>	Analytical Spike (Post Digestion) Duplicate	<i>LFB</i>	Laboratory Fortified Blank
<i>CCB</i>	Continuing Calibration Blank	<i>LFM</i>	Laboratory Fortified Matrix
<i>CCV</i>	Continuing Calibration Verification standard	<i>LFMD</i>	Laboratory Fortified Matrix Duplicate
<i>DUP</i>	Sample Duplicate	<i>LRB</i>	Laboratory Reagent Blank
<i>ICB</i>	Initial Calibration Blank	<i>MS</i>	Matrix Spike
<i>ICV</i>	Initial Calibration Verification standard	<i>MSD</i>	Matrix Spike Duplicate
<i>ICSAB</i>	Inter-element Correction Standard - A plus B solutions	<i>PBS</i>	Prep Blank - Soil
<i>LCSS</i>	Laboratory Control Sample - Soil	<i>PBW</i>	Prep Blank - Water
<i>LCSSD</i>	Laboratory Control Sample - Soil Duplicate	<i>PQV</i>	Practical Quantitation Verification standard
<i>LCSW</i>	Laboratory Control Sample - Water	<i>SDL</i>	Serial Dilution

**QC Sample Type Explanations**

<b>Blanks</b>	Verifies that there is no or minimal contamination in the prep method or calibration procedure.
<b>Control Samples</b>	Verifies the accuracy of the method, including the prep procedure.
<b>Duplicates</b>	Verifies the precision of the instrument and/or method.
<b>Spikes/Fortified Matrix</b>	Determines sample matrix interferences, if any.
<b>Standard</b>	Verifies the validity of the calibration.

**ACZ Qualifiers (Qual)**

<b>B</b>	Analyte concentration detected at a value between MDL and PQL. The associated value is an estimated quantity.
<b>H</b>	Analysis exceeded method hold time. pH is a field test with an immediate hold time.
<b>L</b>	Target analyte response was below the laboratory defined negative threshold.
<b>U</b>	The material was analyzed for, but was not detected above the level of the associated value. The associated value is either the sample quantitation limit or the sample detection limit.

**Method References**

- (1) EPA 600/4-83-020. Methods for Chemical Analysis of Water and Wastes, March 1983.
- (2) EPA 600/R-93-100. Methods for the Determination of Inorganic Substances in Environmental Samples, August 1993.
- (3) EPA 600/R-94-111. Methods for the Determination of Metals in Environmental Samples - Supplement I, May 1994.
- (4) EPA SW-846. Test Methods for Evaluating Solid Waste.
- (5) Standard Methods for the Examination of Water and Wastewater.

**Comments**

- (1) QC results calculated from raw data. Results may vary slightly if the rounded values are used in the calculations.
- (2) Soil, Sludge, and Plant matrices for Inorganic analyses are reported on a dry weight basis.
- (3) Animal matrices for Inorganic analyses are reported on an "as received" basis.
- (4) An asterisk in the "XQ" column indicates there is an extended qualifier and/or certification qualifier associated with the result.
- (5) If the MDL equals the PQL or the MDL column is omitted, the PQL is the reporting limit.

For a complete list of ACZ's Extended Qualifiers, please click:

<http://www.acz.com/public/extquallist.pdf>

**Stewart Environmental Consultants, Inc.**ACZ Project ID: **L38587**

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
--------	---------	-----------	--------	------	-------------

No extended qualifiers associated with this analysis



Stewart Environmental Consultants, Inc.

ACZ Project ID: **L38587**

No certification qualifiers associated with this analysis

**Stewart Environmental Consultants, Inc.**

ACZ Project ID: L38587  
Date Received: 07/20/2017 11:33  
Received By:  
Date Printed: 7/20/2017

**Receipt Verification**

	YES	NO	NA
1) Is a foreign soil permit included for applicable samples?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
2) Is the Chain of Custody form or other directive shipping papers present?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3) Does this project require special handling procedures such as CLP protocol?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
4) Are any samples NRC licensable material?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
5) If samples are received past hold time, proceed with requested short hold time analyses?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6) Is the Chain of Custody form complete and accurate?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7) Were any changes made to the Chain of Custody form prior to ACZ receiving the samples?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

**Samples/Containers**

	YES	NO	NA
8) Are all containers intact and with no leaks?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9) Are all labels on containers and are they intact and legible?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
10) Do the sample labels and Chain of Custody form match for Sample ID, Date, and Time?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
11) For preserved bottle types, was the pH checked and within limits? <sup>1</sup>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
12) Is there sufficient sample volume to perform all requested work?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
13) Is the custody seal intact on all containers?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
14) Are samples that require zero headspace acceptable?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
15) Are all sample containers appropriate for analytical requirements?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
16) Is there an Hg-1631 trip blank present?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
17) Is there a VOA trip blank present?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
18) Were all samples received within hold time?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

**Chain of Custody Related Remarks**

**Client Contact Remarks**

**Shipping Containers**

Cooler Id	Temp (°C)	Temp Criteria (°C)	Rad (µR/Hr)	Custody Seal Intact?
4413	0.3	<=6.0	15	N/A

Was ice present in the shipment container(s)?

Yes - Wet ice was present in the shipment container(s).

Client must contact an ACZ Project Manager if analysis should not proceed for samples received outside of their thermal preservation acceptance criteria.

**Stewart Environmental Consultants, Inc.**

ACZ Project ID: L38587

Date Received: 07/20/2017 11:33

Received By:

Date Printed: 7/20/2017

<sup>1</sup> The preservation of the following bottle types is not checked at sample receipt: Orange (oil and grease), Purple (total cyanide), Pink (dissolved cyanide), Brown (arsenic speciation), Sterile (fecal coliform), EDTA (sulfite), HCl preserved vial (organics), Na<sub>2</sub>S<sub>2</sub>O<sub>3</sub> preserved vial (organics), and HG-1631 (total/dissolved mercury by method 1631).



L38587 Chain of Custody

**CHAIN OF CUSTODY RECORD**

**STEWART ENVIRONMENTAL CONSULTANTS, INC.**  
3801 Automation Way, Suite 200, Fort Collins, CO 80525

L38587

Batch:

Telephone: (970) 226-5500

Facsimile: (

PAGE \_\_\_\_ OF \_\_\_\_

USE ONLY								SAMPLER	
Client No.	CLIENT: <b>Stratus Companies - ACZ</b>							Name:	<b>James Stewart</b>
Sample No.	SAMPLE COLLECTION INFO			CLIENT SAMPLE IDENTIFICATION	Matrix Type	QC Report Needed	Total No. of Cont.	Signature:	ANALYSES REQUESTED
	Date	Time	Grab / Comp						
<b>S10-</b>									
	7-17-17	13:30		MW-16	WW		1		Phenols
									Total Organic Carbon *
									Method 8270 (all normal compounds, including those below)
									<del>Benzyl Butyl Phthalate</del>
									<del>Bis(2-ethylhexyl) phthalate</del>
									<del>Di-n-butyl Phthalate</del>
									<del>Diethyl Phthalate</del>
									<del>Dimethyl Phthalate</del>
									<del>Di-n-octyl Phthalate</del>
									1,4-Dioxane
									Benzoic Acid
									Benzyl alcohol
									2-Methylphenol
<p>Compliance samples may require you to report the temperature of samples as they arrive in the laboratory. Would you like the temperature of samples recorded upon receipt by the</p> <p>Leaving this field blank implies that the incoming temperature is not requested.</p>									
RELINQUISHED BY		DATE / TIME	Received by		Date / Time	REQUESTED COMPLETION DATE		REPORT TO:	PHONE:
<i>[Signature]</i>		7-18-17 14:30	CF 7/19/17		1430				
Relinquished by		Date / Time	Received by		Date / Time	MATRIX TYPE		CLIENT:	
CF 7/19/17		1430	Bry 7/20/17		1133	WW = waste water DW = drinking water L = Liquid S = soil A = Air SL = sludge SD = Solid		ADDRESS:	
Relinquished by		Date / Time	Received by		Date / Time	CDPHE REPORT REQUIRED:		CITY, STATE ZIP:	
								INVOICE TO:	
Database Entry By		Date				PWSID #		ADDRESS:	
						Sample Kit Sent? Yes / No		CITY, STATE ZIP:	

August 18, 2017

**Report to:**

Trevor Mueller

Stewart Environmental Consultants, Inc.

2600 Canton Ct.

Unit C

Fort Collins, CO 80525

cc: Trevor Mueller

**Bill to:**

Accounts Payable

Stewart Environmental Consultants, Inc.

2600 Canton Ct.

Unit C

Fort Collins, CO 80525

**Project ID:**

ACZ Project ID: L38809

**Trevor Mueller:**

Enclosed are the analytical results for sample(s) submitted to ACZ Laboratories, Inc. (ACZ) on July 28, 2017. This project has been assigned to ACZ's project number, L38809. Please reference this number in all future inquiries.

All analyses were performed according to ACZ's Quality Assurance Plan. The enclosed results relate only to the samples received under L38809. Each section of this report has been reviewed and approved by the appropriate Laboratory Supervisor, or a qualified substitute.

Except as noted, the test results for the methods and parameters listed on ACZ's current NELAC certificate letter (#ACZ) meet all requirements of NELAC.

This report shall be used or copied only in its entirety. ACZ is not responsible for the consequences arising from the use of a partial report.

All samples and sub-samples associated with this project will be disposed of after September 17, 2017. If the samples are determined to be hazardous, additional charges apply for disposal (typically \$11/sample). If you would like the samples to be held longer than ACZ's stated policy or to be returned, please contact your Project Manager or Customer Service Representative for further details and associated costs. ACZ retains analytical raw data reports for ten years.

If you have any questions or other needs, please contact your Project Manager.



Sue Webber has reviewed and  
approved this report.



Stewart Environmental Consultants, Inc.

Project ID:

Sample ID: MW-19

ACZ Sample ID: L38809-01

Date Sampled: 07/27/17 10:00

Date Received: 07/28/17

Sample Matrix: Waste Water

## Wet Chemistry

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Carbon, total organic (TOC)	SM5310B	1	6.7		*	mg/L	1	5	08/02/17 17:31	bce

Arizona license number: AZ0102

**Report Header Explanations**

<i>Batch</i>	A distinct set of samples analyzed at a specific time
<i>Found</i>	Value of the QC Type of interest
<i>Limit</i>	Upper limit for RPD, in %.
<i>Lower</i>	Lower Recovery Limit, in % (except for LCSS, mg/Kg)
<i>MDL</i>	Method Detection Limit. Same as Minimum Reporting Limit unless omitted or equal to the PQL (see comment #5). Allows for instrument and annual fluctuations.
<i>PCN/SCN</i>	A number assigned to reagents/standards to trace to the manufacturer's certificate of analysis
<i>PQL</i>	Practical Quantitation Limit. Synonymous with the EPA term "minimum level".
<i>QC</i>	True Value of the Control Sample or the amount added to the Spike
<i>Rec</i>	Recovered amount of the true value or spike added, in % (except for LCSS, mg/Kg)
<i>RPD</i>	Relative Percent Difference, calculation used for Duplicate QC Types
<i>Upper</i>	Upper Recovery Limit, in % (except for LCSS, mg/Kg)
<i>Sample</i>	Value of the Sample of interest

**QC Sample Types**

<i>AS</i>	Analytical Spike (Post Digestion)	<i>LCSWD</i>	Laboratory Control Sample - Water Duplicate
<i>ASD</i>	Analytical Spike (Post Digestion) Duplicate	<i>LFB</i>	Laboratory Fortified Blank
<i>CCB</i>	Continuing Calibration Blank	<i>LFM</i>	Laboratory Fortified Matrix
<i>CCV</i>	Continuing Calibration Verification standard	<i>LFMD</i>	Laboratory Fortified Matrix Duplicate
<i>DUP</i>	Sample Duplicate	<i>LRB</i>	Laboratory Reagent Blank
<i>ICB</i>	Initial Calibration Blank	<i>MS</i>	Matrix Spike
<i>ICV</i>	Initial Calibration Verification standard	<i>MSD</i>	Matrix Spike Duplicate
<i>ICSAB</i>	Inter-element Correction Standard - A plus B solutions	<i>PBS</i>	Prep Blank - Soil
<i>LCSS</i>	Laboratory Control Sample - Soil	<i>PBW</i>	Prep Blank - Water
<i>LCSSD</i>	Laboratory Control Sample - Soil Duplicate	<i>PQV</i>	Practical Quantitation Verification standard
<i>LCSW</i>	Laboratory Control Sample - Water	<i>SDL</i>	Serial Dilution

**QC Sample Type Explanations**

<b>Blanks</b>	Verifies that there is no or minimal contamination in the prep method or calibration procedure.
<b>Control Samples</b>	Verifies the accuracy of the method, including the prep procedure.
<b>Duplicates</b>	Verifies the precision of the instrument and/or method.
<b>Spikes/Fortified Matrix</b>	Determines sample matrix interferences, if any.
<b>Standard</b>	Verifies the validity of the calibration.

**ACZ Qualifiers (Qual)**

<b>B</b>	Analyte concentration detected at a value between MDL and PQL. The associated value is an estimated quantity.
<b>H</b>	Analysis exceeded method hold time. pH is a field test with an immediate hold time.
<b>L</b>	Target analyte response was below the laboratory defined negative threshold.
<b>U</b>	The material was analyzed for, but was not detected above the level of the associated value. The associated value is either the sample quantitation limit or the sample detection limit.

**Method References**

- (1) EPA 600/4-83-020. Methods for Chemical Analysis of Water and Wastes, March 1983.
- (2) EPA 600/R-93-100. Methods for the Determination of Inorganic Substances in Environmental Samples, August 1993.
- (3) EPA 600/R-94-111. Methods for the Determination of Metals in Environmental Samples - Supplement I, May 1994.
- (4) EPA SW-846. Test Methods for Evaluating Solid Waste.
- (5) Standard Methods for the Examination of Water and Wastewater.

**Comments**

- (1) QC results calculated from raw data. Results may vary slightly if the rounded values are used in the calculations.
- (2) Soil, Sludge, and Plant matrices for Inorganic analyses are reported on a dry weight basis.
- (3) Animal matrices for Inorganic analyses are reported on an "as received" basis.
- (4) An asterisk in the "XQ" column indicates there is an extended qualifier and/or certification qualifier associated with the result.
- (5) If the MDL equals the PQL or the MDL column is omitted, the PQL is the reporting limit.

For a complete list of ACZ's Extended Qualifiers, please click:

<http://www.acz.com/public/extquallist.pdf>

Stewart Environmental Consultants, Inc.

ACZ Project ID: **L38809****Carbon, total organic (TOC)**

SM5310B

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
<b>WG427972</b>													
WG427972ICV	ICV	08/01/17 11:00	WI170707-1	100		104	mg/L	104	90	110			
WG427972ICB	ICB	08/01/17 11:00				U	mg/L		-3	3			
<b>WG428037</b>													
WG428037LFB	LFB	08/02/17 17:31	WI170531-4	50		48.1	mg/L	96	90	110			
L38710-01DUP	DUP	08/02/17 17:31			2.4	3.3	mg/L				32	20	RA
L38710-02AS	AS	08/02/17 17:31	WI170531-4	50	1.1	52.8	mg/L	103	90	110			



Stewart Environmental Consultants, Inc.

ACZ Project ID: **L38809**

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
L38809-01	WG428037	Carbon, total organic (TOC)	SM5310B	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).

Stewart Environmental Consultants, Inc.

Project ID:

Sample ID: MW-19

ACZ Sample ID: L38809-01

Date Sampled: 07/27/17 10:00

Date Received: 07/28/17

Sample Matrix: Waste Water

**Base Neutral Acid Extractables by GC/MS**

Analysis Method: M8270C GC/MS

Extract Method: M3520C

Workgroup: WG429249

Analyst: itm

Extract Date: 08/02/17 16:27

Analysis Date: 08/16/17 14:45

Compound	CAS	Result	QUAL	Dilution	XQ	Units	MDL	PQL
1,2,4-Trichlorobenzene	120-82-1		U	0.94	*	ug/L	2	9
1,2-Dichlorobenzene	95-50-1		U	0.94	*	ug/L	2	9
1,3-Dichlorobenzene	541-73-1		U	0.94	*	ug/L	2	9
1,4-Dichlorobenzene	106-46-7		U	0.94	*	ug/L	2	9
1,4-Dioxane	123-91-1		U	0.94	*	ug/L	2	9
2,4,5-Trichlorophenol	95-95-4		U	0.94	*	ug/L	9	50
2,4,6-Trichlorophenol	88-06-2		U	0.94	*	ug/L	2	9
2,4-Dichlorophenol	120-83-2		U	0.94	*	ug/L	2	9
2,4-Dimethylphenol	105-67-9		U	0.94	*	ug/L	4	20
2,4-Dinitrophenol	51-28-5		U	0.94	*	ug/L	20	50
2,4-Dinitrotoluene	121-14-2		U	0.94	*	ug/L	2	9
2,6-Dinitrotoluene	606-20-8		U	0.94	*	ug/L	9	50
2-Chloronaphthalene	91-58-7		U	0.94	*	ug/L	2	9
2-Chlorophenol	95-57-8		U	0.94	*	ug/L	2	9
2-Methylnaphthalene	91-57-6		U	0.94	*	ug/L	2	9
2-Methylphenol	95-48-7		U	0.94	*	ug/L	2	9
2-Nitroaniline	88-74-4		U	0.94	*	ug/L	9	50
2-Nitrophenol	88-75-5		U	0.94	*	ug/L	4	20
3- & 4-Methylphenol	1319-77-3		U	0.94	*	ug/L	4	20
3,3-Dichlorobenzidine	91-94-1		U	0.94	*	ug/L	20	50
3-Nitroaniline	99-09-2		U	0.94	*	ug/L	9	50
4,6-Dinitro-2-methylphenol	534-52-1		U	0.94	*	ug/L	9	50
4-Bromophenyl phenyl ether	101-55-3		U	0.94	*	ug/L	2	9
4-Chloro-3-methylphenol	59-50-7		U	0.94	*	ug/L	2	9
4-Chloroaniline	106-47-8		U	0.94	*	ug/L	2	9
4-Chlorophenyl phenyl ether	7005-72-3		U	0.94	*	ug/L	2	9
4-Nitroaniline	100-01-6		U	0.94	*	ug/L	9	50
4-Nitrophenol	100-02-07		U	0.94	*	ug/L	9	50
Acenaphthene	83-32-9		U	0.94	*	ug/L	2	9
Acenaphthylene	208-96-8		U	0.94	*	ug/L	2	9
Aniline	62-53-3		U	0.94	*	ug/L	9	50
Anthracene	120-12-7		U	0.94	*	ug/L	2	9
Azobenzene	103-33-3		U	0.94	*	ug/L	9	50
Benzidine	92-87-5		U	0.94	*	ug/L	4	20
Benzo(a)anthracene	56-55-3		U	0.94	*	ug/L	2	9
Benzo(a)pyrene	50-32-8		U	0.94	*	ug/L	2	9
Benzo(b)fluoranthene	205-99-2		U	0.94	*	ug/L	2	9
Benzo(g,h,i)perylene	191-24-2		U	0.94	*	ug/L	2	9

**Stewart Environmental Consultants, Inc.**

Project ID:

Sample ID: MW-19

ACZ Sample ID: L38809-01

Date Sampled: 07/27/17 10:00

Date Received: 07/28/17

Sample Matrix: Waste Water

Benzo(k)fluoranthene	207-08-9	U	0.94	*	ug/L	2	9
Benzoic Acid	65-85-0	U	0.94	*	ug/L	20	50
Benzyl alcohol	100-51-6	U	0.94	*	ug/L	2	9
Bis(2-chloroethoxy)methane	111-91-1	U	0.94	*	ug/L	2	9
Bis(2-chloroethyl) ether	111-44-4	U	0.94	*	ug/L	2	9
Bis(2-chloroisopropyl) ether	108-60-1	U	0.94	*	ug/L	2	9
Bis(2-ethylhexyl) phthalate	117-81-7	U	0.94	*	ug/L	4	20
Butyl benzyl phthalate	85-68-7	U	0.94	*	ug/L	2	9
Chrysene	218-01-9	U	0.94	*	ug/L	2	9
Dibenzo(a,h)anthracene	53-70-3	U	0.94	*	ug/L	2	9
Dibenzofuran	132-64-9	U	0.94	*	ug/L	2	9
Diethylphthalate	84-66-2	U	0.94	*	ug/L	2	9
Dimethyl phthalate	131-11-3	U	0.94	*	ug/L	2	9
Di-n-butyl phthalate	84-74-2	U	0.94	*	ug/L	2	9
Di-n-octyl phthalate	117-84-0	U	0.94	*	ug/L	2	9
Fluoranthene	206-44-0	U	0.94	*	ug/L	2	9
Fluorene	86-73-7	U	0.94	*	ug/L	2	9
Hexachlorobenzene	118-74-1	U	0.94	*	ug/L	2	9
Hexachlorobutadiene	87-68-3	U	0.94	*	ug/L	2	9
Hexachlorocyclopentadiene	77-47-4	U	0.94	*	ug/L	4	20
Hexachloroethane	67-72-1	U	0.94	*	ug/L	2	9
Indeno(1,2,3-cd)pyrene	193-39-5	U	0.94	*	ug/L	2	9
Isophorone	78-59-1	U	0.94	*	ug/L	2	9
Naphthalene	91-20-3	U	0.94	*	ug/L	2	9
Nitrobenzene	98-95-3	U	0.94	*	ug/L	2	9
N-Nitrosodimethylamine	62-75-9	U	0.94	*	ug/L	9	50
N-Nitrosodi-n-propylamine	621-64-7	U	0.94	*	ug/L	2	9
N-Nitrosodiphenylamine	86-30-6	U	0.94	*	ug/L	2	9
Pentachlorophenol	87-86-5	U	0.94	*	ug/L	9	50
Phenanthrene	85-01-8	U	0.94	*	ug/L	2	9
Phenol	108-95-2	U	0.94	*	ug/L	4	20
Pyrene	129-00-0	U	0.94	*	ug/L	2	9

Surrogate Recoveries	CAS	% Recovery	Dilution	XQ	Units	LCL	UCL
2,4,6-Tribromophenol	118-79-6	80.4	0.94	*	%	40	125
2-Fluorobiphenyl	321-60-8	71.9	0.94	*	%	50	110
2-Fluorophenol	367-12-4	54.3	0.94	*	%	54	100
Nitrobenzene-d5	4165-60-0	68.9	0.94	*	%	40	110
Phenol-d6	13127-88-3	65.7	0.94	*	%	47	113
Terphenyl-d14	1718-51-0	69.6	0.94	*	%	50	135

Arizona license number: AZ0102

**Report Header Explanations**

<i>Batch</i>	A distinct set of samples analyzed at a specific time
<i>Found</i>	Value of the QC Type of interest
<i>Limit</i>	Upper limit for RPD, in %.
<i>Lower</i>	Lower Recovery Limit, in % (except for LCSS, mg/Kg)
<i>LCL</i>	Lower Control Limit
<i>MDL</i>	Method Detection Limit. Same as Minimum Reporting Limit unless omitted or equal to the PQL (see comment #4) Allows for instrument and annual fluctuations.
<i>PCN/SCN</i>	A number assigned to reagents/standards to trace to the manufacturer's certificate of analysis
<i>PQL</i>	Practical Quantitation Limit. Synonymous with the EPA term "minimum level".
<i>QC</i>	True Value of the Control Sample or the amount added to the Spike
<i>Rec</i>	Amount of the true value or spike added recovered, in % (except for LCSS, mg/Kg)
<i>RPD</i>	Relative Percent Difference, calculation used for Duplicate QC Types
<i>Upper</i>	Upper Recovery Limit, in % (except for LCSS, mg/Kg)
<i>UCL</i>	Upper Control Limit
<i>Sample</i>	Value of the Sample of interest

**QC Sample Types**

<i>SURR</i>	Surrogate	<i>LFM</i>	Laboratory Fortified Matrix
<i>INTS</i>	Internal Standard	<i>LFMD</i>	Laboratory Fortified Matrix Duplicate
<i>DUP</i>	Sample Duplicate	<i>LRB</i>	Laboratory Reagent Blank
<i>LCSS</i>	Laboratory Control Sample - Soil	<i>MS/MSD</i>	Matrix Spike/Matrix Spike Duplicate
<i>LCSW</i>	Laboratory Control Sample - Water	<i>PBS</i>	Prep Blank - Soil
<i>LFB</i>	Laboratory Fortified Blank	<i>PBW</i>	Prep Blank - Water

**QC Sample Type Explanations**

Blanks	Verifies that there is no or minimal contamination in the prep method or calibration procedure.
Control Samples	Verifies the accuracy of the method, including the prep procedure.
Duplicates	Verifies the precision of the instrument and/or method.
Spikes/Fortified Matrix	Determines sample matrix interferences, if any.

**ACZ Qualifiers (Qual)**

<b>B</b>	Analyte concentration detected at a value between MDL and PQL. The associated value is an estimated quantity.
<b>O</b>	Analyte concentration is estimated due to result exceeding calibration range.
<b>H</b>	Analysis exceeded method hold time. pH is a field test with an immediate hold time.
<b>J</b>	Analyte concentration detected at a value between MDL and PQL. The associated value is an estimated quantity.
<b>L</b>	Target analyte response was below the laboratory defined negative threshold.
<b>U</b>	The material was analyzed for, but was not detected above the level of the associated value. The associated value is either the sample quantitation limit or the sample detection limit.

**Method References**

- (1) EPA 600/4-83-020. Methods for Chemical Analysis of Water and Wastes, March 1983.
- (2) EPA 600/4-90/020. Methods for the Determination of Organic Compounds in Drinking Water (I), July 1990.
- (3) EPA 600/R-92/129. Methods for the Determination of Organic Compounds in Drinking Water (II), July 1990.
- (4) EPA SW-846. Test Methods for Evaluating Solid Waste.
- (5) Standard Methods for the Examination of Water and Wastewater.

**Comments**

- (1) QC results calculated from raw data. Results may vary slightly if the rounded values are used in the calculations.
- (2) Excluding Oil & Grease, solid & biological matrices for organic analyses are reported on a wet weight basis.
- (3) An asterisk in the "XQ" column indicates there is an extended qualifier and/or certification qualifier associated with the result.
- (4) If the MDL equals the PQL or the MDL column is omitted, the PQL is the reporting limit.

For a complete list of ACZ's Extended Qualifiers, please click:

<http://www.acz.com/public/extquallist.pdf>

Stewart Environmental Consultants, Inc.

ACZ Project ID: **L38809**

**Base Neutral Acid Extractables by GC/MS**

M8270C GC/MS

**WG429249**

MS	Sample ID: L38809-01MS		PCN/SCN: OPBNA170523-1				Analyzed:		08/16/17 15:19	
Compound	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
1,2,4-TRICHLOROBENZENE	50013	U	27.1	ug/L	57.0	35	105			
1,4-DICHLOROBENZENE	50013	U	25.9	ug/L	55.0	30	100			
2,4-DINITROTOLUENE	50013	U	35.7	ug/L	76.0	50	120			
2-CHLOROPHENOL	75080	U	44.8	ug/L	63.0	35	105			
4-CHLORO-3-METHYLPHENOL	75040	U	53.8	ug/L	76.0	45	110			
4-NITROPHENOL	75120	U	55.2	ug/L	78.0	0	125			
ACENAPHTHENE	50007	U	35.5	ug/L	75.0	45	110			
N-NITROSODI-N-PROPYLAMINE	50027	U	33.7	ug/L	71.0	35	130			
PENTACHLOROPHENOL	75040	U	60.7	ug/L	86.0	40	115			
PHENOL	75060	U	47	ug/L	66.0	0	115			
PYRENE	50003	U	36.3	ug/L	77.0	50	130			
2,4,6-TRIBROMOPHENOL (surr)				%	88.1	40	125			
2-FLUOROBIPHENYL (surr)				%	77.3	50	110			
2-FLUOROPHENOL (surr)				%	61.9	54	100			
NITROBENZENE-D5 (surr)				%	76.0	40	110			
PHENOL-D6 (surr)				%	71.9	47	113			
TERPHENYL-D14 (surr)				%	78.2	50	135			

DUP	Sample ID: L38810-01DUP					Analyzed:			08/16/17 16:25	
Compound	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
1,2,4-TRICHLOROBENZENE		U	U	ug/L				0	20	RA
1,2-DICHLOROBENZENE		U	U	ug/L				0	20	RA
1,3-DICHLOROBENZENE		U	U	ug/L				0	20	RA
1,4-DICHLOROBENZENE		U	U	ug/L				0	20	RA
1,4-DIOXANE		11	10.1	ug/L				9	20	RA
2,4,5-TRICHLOROPHENOL		U	U	ug/L				0	20	RA
2,4,6-TRICHLOROPHENOL		U	U	ug/L				0	20	RA
2,4-DICHLOROPHENOL		U	U	ug/L				0	20	RA
2,4-DIMETHYLPHENOL		U	U	ug/L				0	20	RA
2,4-DINITROPHENOL		U	U	ug/L				0	20	RA
2,4-DINITROTOLUENE		U	U	ug/L				0	20	RA
2,6-DINITROTOLUENE		U	U	ug/L				0	20	RA
2-CHLORONAPHTHALENE		U	U	ug/L				0	20	RA
2-CHLOROPHENOL		U	U	ug/L				0	20	RA
2-METHYLNAPHTHALENE		U	U	ug/L				0	20	RA
2-METHYLPHENOL		U	U	ug/L				0	20	RA
2-NITROANILINE		U	U	ug/L				0	20	RA
2-NITROPHENOL		U	U	ug/L				0	20	RA
3- & 4-METHYLPHENOL		U	U	ug/L				0	20	RA
3,3-DICHLORO BENZIDINE		U	U	ug/L				0	20	RA
3-NITROANILINE		U	U	ug/L				0	20	RA
4,6-DINITRO-2-METHYLPHENOL		U	U	ug/L				0	20	RA
4-BROMOPHENYL PHENYL ETHER		U	U	ug/L				0	20	RA
4-CHLORO-3-METHYLPHENOL		U	U	ug/L				0	20	RA

Stewart Environmental Consultants, Inc.

ACZ Project ID: **L38809**

4-CHLOROANILINE	U	U	ug/L	0	20	RA
4-CHLOROPHENYL PHENYL ETHER	U	U	ug/L	0	20	RA
4-NITROANILINE	U	U	ug/L	0	20	RA
4-NITROPHENOL	U	U	ug/L	0	20	RA
ACENAPHTHENE	U	U	ug/L	0	20	RA
ACENAPHTHYLENE	U	U	ug/L	0	20	RA
ANILINE	U	U	ug/L	0	20	RA
ANTHRACENE	U	U	ug/L	0	20	RA
AZOBENZENE	U	U	ug/L	0	20	RA
BENZIDINE	U	U	ug/L	0	20	RA
BENZO(A)ANTHRACENE	U	U	ug/L	0	20	RA
BENZO(A)PYRENE	U	U	ug/L	0	20	RA
BENZO(B)FLUORANTHENE	U	U	ug/L	0	20	RA
BENZO(G,H,I)PERYLENE	U	U	ug/L	0	20	RA
BENZO(K)FLUORANTHENE	U	U	ug/L	0	20	RA
BENZOIC ACID	U	U	ug/L	0	20	RA
BENZYL ALCOHOL	U	U	ug/L	0	20	RA
BIS(2-CHLOROETHOXY)METHANE	U	U	ug/L	0	20	RA
BIS(2-CHLOROETHYL) ETHER	U	U	ug/L	0	20	RA
BIS(2-CHLOROISOPROPYL) ETHER	U	U	ug/L	0	20	RA
BIS(2-ETHYLHEXYL) PHTHALATE	U	U	ug/L	0	20	RA
BUTYL BENZYL PHTHALATE	U	U	ug/L	0	20	RA
CHRYSENE	U	U	ug/L	0	20	RA
DIBENZO(A,H)ANTHRACENE	U	U	ug/L	0	20	RA
DIBENZOFURAN	U	U	ug/L	0	20	RA
DIETHYLPHTHALATE	U	U	ug/L	0	20	RA
DIMETHYL PHTHALATE	U	U	ug/L	0	20	RA
DI-N-BUTYL PHTHALATE	U	U	ug/L	0	20	RA
DI-N-OCTYL PHTHALATE	U	U	ug/L	0	20	RA
FLUORANTHENE	U	U	ug/L	0	20	RA
FLUORENE	U	U	ug/L	0	20	RA
HEXACHLOROBENZENE	U	U	ug/L	0	20	RA
HEXACHLOROBUTADIENE	U	U	ug/L	0	20	RA
HEXACHLOROCYCLOPENTADIENE	U	U	ug/L	0	20	RA
HEXACHLOROETHANE	U	U	ug/L	0	20	RA
INDENO(1,2,3-CD)PYRENE	U	U	ug/L	0	20	RA
ISOPHORONE	U	U	ug/L	0	20	RA
NAPHTHALENE	U	U	ug/L	0	20	RA
NITROBENZENE	U	U	ug/L	0	20	RA
N-NITROSODIMETHYLAMINE	U	U	ug/L	0	20	RA
N-NITROSODI-N-PROPYLAMINE	U	U	ug/L	0	20	RA
N-NITROSODIPHENYLAMINE	U	U	ug/L	0	20	RA
PENTACHLOROPHENOL	U	U	ug/L	0	20	RA
PHENANTHRENE	U	U	ug/L	0	20	RA
PHENOL	U	U	ug/L	0	20	RA
PYRENE	U	U	ug/L	0	20	RA
2,4,6-TRIBROMOPHENOL (surr)			%	92.6	40	125
2-FLUOROBIPHENYL (surr)			%	70.3	50	110
2-FLUOROPHENOL (surr)			%	59.7	54	100

Stewart Environmental Consultants, Inc.

ACZ Project ID: L38809

NITROBENZENE-D5 (surr)	%	72.0	40	110
PHENOL-D6 (surr)	%	73.7	47	113
TERPHENYL-D14 (surr)	%	60.8	50	135

LCSW	Sample ID: WG428109LCSW		PCN/SCN: OPBNA170523-1				Analyzed:		08/16/17 13:39	
Compound	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
1,2,4-TRICHLOROBENZENE	50013		29.6	ug/L	59.0	35	105			
1,4-DICHLOROBENZENE	50013		29.4	ug/L	59.0	30	100			
2,4-DINITROTOLUENE	50013		39.9	ug/L	80.0	50	120			
2-CHLOROPHENOL	75080		51	ug/L	68.0	35	105			
4-CHLORO-3-METHYLPHENOL	75040		55.2	ug/L	74.0	45	110			
4-NITROPHENOL	75120		60	ug/L	80.0	0	125			
ACENAPHTHENE	50007		38.7	ug/L	77.0	45	110			
N-NITROSODI-N-PROPYLAMINE	50027		40.1	ug/L	80.0	35	130			
PENTACHLOROPHENOL	75040		55	ug/L	73.0	40	115			
PHENOL	75060		52.5	ug/L	70.0	0	115			
PYRENE	50003		44.8	ug/L	90.0	50	130			
2,4,6-TRIBROMOPHENOL (surr)				%	81.7	40	125			
2-FLUOROBIPHENYL (surr)				%	79.9	50	110			
2-FLUOROPHENOL (surr)				%	67.8	54	100			
NITROBENZENE-D5 (surr)				%	82.8	40	110			
PHENOL-D6 (surr)				%	75.5	47	113			
TERPHENYL-D14 (surr)				%	107.2	50	135			

LCSWD	Sample ID: WG428109LCSWD		PCN/SCN: OPBNA170523-1			Analyzed:			08/16/17 14:12	
Compound	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
1,2,4-TRICHLOROBENZENE	50013		36	ug/L	72.0	35	105	20	20	
1,4-DICHLOROBENZENE	50013		36.3	ug/L	73.0	30	100	21	20	R4
2,4-DINITROTOLUENE	50013		43.3	ug/L	87.0	50	120	8	20	
2-CHLOROPHENOL	75080		63.3	ug/L	84.0	35	105	22	20	R4
4-CHLORO-3-METHYLPHENOL	75040		64.2	ug/L	86.0	45	110	15	20	
4-NITROPHENOL	75120		61	ug/L	81.0	0	125	2	20	
ACENAPHTHENE	50007		45	ug/L	90.0	45	110	15	20	
N-NITROSODI-N-PROPYLAMINE	50027		47.7	ug/L	95.0	35	130	17	20	
PENTACHLOROPHENOL	75040		60	ug/L	80.0	40	115	9	20	
PHENOL	75060		61.4	ug/L	82.0	0	115	16	20	
PYRENE	50003		45.2	ug/L	90.0	50	130	1	20	
2,4,6-TRIBROMOPHENOL (surr)				%	86.9	40	125			
2-FLUOROBIPHENYL (surr)				%	88.5	50	110			
2-FLUOROPHENOL (surr)				%	78.0	54	100			
NITROBENZENE-D5 (surr)				%	96.9	40	110			
PHENOL-D6 (surr)				%	84.1	47	113			
TERPHENYL-D14 (surr)				%	104.4	50	135			

PBW		Sample ID: WG428109PBW						Analyzed: 08/16/17 13:06		
Compound	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
1,2,4-TRICHLOROBENZENE			U	ug/L		-10	10			
1,2-DICHLOROBENZENE			U	ug/L		-10	10			
1,3-DICHLOROBENZENE			U	ug/L		-10	10			

Stewart Environmental Consultants, Inc.

ACZ Project ID: L38809

1,4-DICHLOROBENZENE	U	ug/L	-10	10
1,4-DIOXANE	U	ug/L	-10	10
2,4,5-TRICHLOROPHENOL	U	ug/L	-50	50
2,4,6-TRICHLOROPHENOL	U	ug/L	-10	10
2,4-DICHLOROPHENOL	U	ug/L	-10	10
2,4-DIMETHYLPHENOL	U	ug/L	-20	20
2,4-DINITROPHENOL	U	ug/L	-50	50
2,4-DINITROTOLUENE	U	ug/L	-10	10
2,6-DINITROTOLUENE	U	ug/L	-50	50
2-CHLORONAPHTHALENE	U	ug/L	-10	10
2-CHLOROPHENOL	U	ug/L	-10	10
2-METHYLNAPHTHALENE	U	ug/L	-10	10
2-METHYLPHENOL	U	ug/L	-10	10
2-NITROANILINE	U	ug/L	-50	50
2-NITROPHENOL	U	ug/L	-20	20
3- & 4-METHYLPHENOL	U	ug/L	-20	20
3,3-DICHLOROBENZIDINE	U	ug/L	-50	50
3-NITROANILINE	U	ug/L	-50	50
4,6-DINITRO-2-METHYLPHENOL	U	ug/L	-50	50
4-BROMOPHENYL PHENYL ETHER	U	ug/L	-10	10
4-CHLORO-3-METHYLPHENOL	U	ug/L	-10	10
4-CHLOROANILINE	U	ug/L	-10	10
4-CHLOROPHENYL PHENYL ETHER	U	ug/L	-10	10
4-NITROANILINE	U	ug/L	-50	50
4-NITROPHENOL	U	ug/L	-50	50
ACENAPHTHENE	U	ug/L	-10	10
ACENAPHTHYLENE	U	ug/L	-10	10
ANILINE	U	ug/L	-50	50
ANTHRACENE	U	ug/L	-10	10
AZOBENZENE	U	ug/L	-50	50
BENZIDINE	U	ug/L	-20	20
BENZO(A)ANTHRACENE	U	ug/L	-10	10
BENZO(A)PYRENE	U	ug/L	-10	10
BENZO(B)FLUORANTHENE	U	ug/L	-10	10
BENZO(G,H,I)PERYLENE	U	ug/L	-10	10
BENZO(K)FLUORANTHENE	U	ug/L	-10	10
BENZOIC ACID	U	ug/L	-50	50
BENZYL ALCOHOL	U	ug/L	-10	10
BIS(2-CHLOROETHOXY)METHANE	U	ug/L	-10	10
BIS(2-CHLOROETHYL) ETHER	U	ug/L	-10	10
BIS(2-CHLOROISOPROPYL) ETHER	U	ug/L	-10	10
BIS(2-ETHYLHEXYL) PHTHALATE	U	ug/L	-20	20
BUTYL BENZYL PHTHALATE	U	ug/L	-10	10
CHRYSENE	U	ug/L	-10	10
DIBENZO(A,H)ANTHRACENE	U	ug/L	-10	10
DIBENZOFURAN	U	ug/L	-10	10
DIETHYLPHTHALATE	U	ug/L	-10	10
DIMETHYL PHTHALATE	U	ug/L	-10	10
DI-N-BUTYL PHTHALATE	U	ug/L	-10	10



Stewart Environmental Consultants, Inc.

ACZ Project ID: **L38809**

DI-N-OCTYL PHTHALATE	U	ug/L	-10	10	
FLUORANTHENE	U	ug/L	-10	10	
FLUORENE	U	ug/L	-10	10	
HEXACHLOROBENZENE	U	ug/L	-10	10	
HEXACHLOROBUTADIENE	U	ug/L	-10	10	
HEXACHLOROCYCLOPENTADIENE	U	ug/L	-20	20	
HEXACHLOROETHANE	U	ug/L	-10	10	
INDENO(1,2,3-CD)PYRENE	U	ug/L	-10	10	
ISOPHORONE	U	ug/L	-10	10	
NAPHTHALENE	U	ug/L	-10	10	
NITROBENZENE	U	ug/L	-10	10	
N-NITROSODIMETHYLAMINE	U	ug/L	-50	50	
N-NITROSODI-N-PROPYLAMINE	U	ug/L	-10	10	
N-NITROSODIPHENYLAMINE	U	ug/L	-10	10	
PENTACHLOROPHENOL	U	ug/L	-50	50	
PHENANTHRENE	U	ug/L	-10	10	
PHENOL	U	ug/L	-20	20	
PYRENE	U	ug/L	-10	10	
2,4,6-TRIBROMOPHENOL (surr)		%	77.8	40	125
2-FLUOROBIPHENYL (surr)		%	82.8	50	110
2-FLUOROPHENOL (surr)		%	68.8	54	100
NITROBENZENE-D5 (surr)		%	86.4	40	110
PHENOL-D6 (surr)		%	76.1	47	113
TERPHENYL-D14 (surr)		%	104.7	50	135

ACZ Project ID: **L38809**

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
L38809-01	WG429249	*All Compounds*	M8270C GC/MS	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
		1,4-Dichlorobenzene	M8270C GC/MS	R4	RPD for a spike and spike duplicate exceeded the method or laboratory acceptance limit. At a minimum, one spike recovery met acceptance criteria.
		2-Chlorophenol	M8270C GC/MS	R4	RPD for a spike and spike duplicate exceeded the method or laboratory acceptance limit. At a minimum, one spike recovery met acceptance criteria.

**Stewart Environmental Consultants, Inc.**

ACZ Project ID: **L38809**

**GC/MS**

The following parameters are not offered for certification or are not covered by NELAC certificate #ACZ.

1,4-Dioxane

M8270C GC/MS

**Stewart Environmental Consultants, Inc.**

ACZ Project ID: L38809

Date Received: 07/28/2017 15:13

Received By:

Date Printed: 7/28/2017

**Receipt Verification**

	YES	NO	NA
1) Is a foreign soil permit included for applicable samples?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
2) Is the Chain of Custody form or other directive shipping papers present?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3) Does this project require special handling procedures such as CLP protocol?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
4) Are any samples NRC licensable material?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
5) If samples are received past hold time, proceed with requested short hold time analyses?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6) Is the Chain of Custody form complete and accurate?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7) Were any changes made to the Chain of Custody form prior to ACZ receiving the samples?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

**Samples/Containers**

	YES	NO	NA
8) Are all containers intact and with no leaks?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9) Are all labels on containers and are they intact and legible?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
10) Do the sample labels and Chain of Custody form match for Sample ID, Date, and Time?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
11) For preserved bottle types, was the pH checked and within limits? <sup>1</sup>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
12) Is there sufficient sample volume to perform all requested work?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
13) Is the custody seal intact on all containers?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
14) Are samples that require zero headspace acceptable?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
15) Are all sample containers appropriate for analytical requirements?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
16) Is there an Hg-1631 trip blank present?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
17) Is there a VOA trip blank present?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
18) Were all samples received within hold time?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

**Chain of Custody Related Remarks**

**Client Contact Remarks**

**Shipping Containers**

Cooler Id	Temp (°C)	Temp Criteria (°C)	Rad (µR/Hr)	Custody Seal Intact?
5245	0.7	<=6.0	14	N/A

Was ice present in the shipment container(s)?

Yes - Wet ice was present in the shipment container(s).

Client must contact an ACZ Project Manager if analysis should not proceed for samples received outside of their thermal preservation acceptance criteria.

**Stewart Environmental Consultants, Inc.**

ACZ Project ID: L38809

Date Received: 07/28/2017 15:13

Received By:

Date Printed: 7/28/2017

<sup>1</sup> The preservation of the following bottle types is not checked at sample receipt: Orange (oil and grease), Purple (total cyanide), Pink (dissolved cyanide), Brown (arsenic speciation), Sterile (fecal coliform), EDTA (sulfite), HCl preserved vial (organics), Na<sub>2</sub>S<sub>2</sub>O<sub>3</sub> preserved vial (organics), and HG-1631 (total/dissolved mercury by method 1631).

C38809



## CHAIN OF CUSTODY RECORD

STEWART ENVIRONMENTAL CONSULTANTS, INC. Chain of Custody  
3801 Automation Way, Suite 200, Fort Collins, CO 80525



Batch:

Telephone: (970) 226-5500

Facsimile: (

PAGE \_\_\_\_ OF \_\_\_\_

EC USE ONLY		CLIENT: <b>Stratus Companies - ACZ</b>						Name: <b>James Stewart</b> <small>SAMPLER</small>	
Client No.							Signature: <i>[Signature]</i>		
Sample No.	SAMPLE COLLECTION INFO			CLIENT SAMPLE IDENTIFICATION	Matrix Type	QC Report Needed	Total No. of Cont.	ANALYSES REQUESTED	
<b>S10-</b>	Date	Time	Grab / Comp						
	7-27-17	10:00	G	MW-19	WW	✓	3	Phenols	
								Total Organic Carbon	
								Method 8270 (all normal compounds, including those below)	
								Benzyl Butyl Phthalate	
								Bis(2-ethylhexyl) phthalate	
								Di-n-butyl Phthalate	
								Diethyl Phthalate	
								Dimethyl Phthalate	
								Di-n-octyl Phthalate	
								1,4-Dioxane	
								Benzoic Acid	
								Benzyl alcohol	
								2-Methylphenol	
Compliance samples may require you to report the temperature of samples as they arrive in the laboratory. Would you like the temperature of samples recorded upon receipt by the									
Leaving this field blank implies that the incoming temperature is not requested.									
RELINQUISHED BY	DATE / TIME	Received by	Date / Time	REQUESTED COMPLETION DATE		REPORT TO:			
<i>[Signature]</i>	7-27-17 14:10	CTF 7/27/17	1410			PHONE:			
Relinquished by	Date / Time	Received by	Date / Time	MATRIX TYPE		CLIENT:			
CTF 7/27/17	1630	BSP	7/28/17 1512	WW = waste water DW = drinking water L = Liquid		ADDRESS:			
Relinquished by	Date / Time	Received by	Date / Time	S = soil SL = sludge A = Air SD = Solid		CITY, STATE ZIP:			
				CDPHE REPORT REQUIRED.		INVOICE TO:			
Database Entry By	Date			PWSID #		ADDRESS:			
				Sample Kit Sent? Yes / No		CITY, STATE ZIP:			

August 04, 2017

**Report to:**

Trevor Mueller  
Stewart Environmental Consultants, Inc.  
2600 Canton Ct.  
Unit C  
Fort Collins, CO 80525

**Bill to:**

Accounts Payable  
Stewart Environmental Consultants, Inc.  
2600 Canton Ct.  
Unit C  
Fort Collins, CO 80525

cc: Trevor Mueller

**Project ID:**

ACZ Project ID: L38457

**Trevor Mueller:**

Enclosed are the analytical results for sample(s) submitted to ACZ Laboratories, Inc. (ACZ) on July 14, 2017. This project has been assigned to ACZ's project number, L38457. Please reference this number in all future inquiries.


All analyses were performed according to ACZ's Quality Assurance Plan. The enclosed results relate only to the samples received under L38457. Each section of this report has been reviewed and approved by the appropriate Laboratory Supervisor, or a qualified substitute.

Except as noted, the test results for the methods and parameters listed on ACZ's current NELAC certificate letter (#ACZ) meet all requirements of NELAC.

This report shall be used or copied only in its entirety. ACZ is not responsible for the consequences arising from the use of a partial report.

All samples and sub-samples associated with this project will be disposed of after September 03, 2017. If the samples are determined to be hazardous, additional charges apply for disposal (typically \$11/sample). If you would like the samples to be held longer than ACZ's stated policy or to be returned, please contact your Project Manager or Customer Service Representative for further details and associated costs. ACZ retains analytical raw data reports for ten years.

If you have any questions or other needs, please contact your Project Manager.



Sue Webber has reviewed and  
approved this report.



**Stewart Environmental Consultants, Inc.**

Project ID:

Sample ID: MW-20

ACZ Sample ID: **L38457-01**

Date Sampled: 07/13/17 14:20

Date Received: 07/14/17

Sample Matrix: Waste Water

## Wet Chemistry

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Carbon, total organic (TOC)	SM5310B	1	15.9		*	mg/L	1	5	08/01/17 11:00	bce

Arizona license number: AZ0102



**Report Header Explanations**

<i>Batch</i>	A distinct set of samples analyzed at a specific time
<i>Found</i>	Value of the QC Type of interest
<i>Limit</i>	Upper limit for RPD, in %.
<i>Lower</i>	Lower Recovery Limit, in % (except for LCSS, mg/Kg)
<i>MDL</i>	Method Detection Limit. Same as Minimum Reporting Limit unless omitted or equal to the PQL (see comment #5). Allows for instrument and annual fluctuations.
<i>PCN/SCN</i>	A number assigned to reagents/standards to trace to the manufacturer's certificate of analysis
<i>PQL</i>	Practical Quantitation Limit. Synonymous with the EPA term "minimum level".
<i>QC</i>	True Value of the Control Sample or the amount added to the Spike
<i>Rec</i>	Recovered amount of the true value or spike added, in % (except for LCSS, mg/Kg)
<i>RPD</i>	Relative Percent Difference, calculation used for Duplicate QC Types
<i>Upper</i>	Upper Recovery Limit, in % (except for LCSS, mg/Kg)
<i>Sample</i>	Value of the Sample of interest

**QC Sample Types**

<i>AS</i>	Analytical Spike (Post Digestion)	<i>LCSWD</i>	Laboratory Control Sample - Water Duplicate
<i>ASD</i>	Analytical Spike (Post Digestion) Duplicate	<i>LFB</i>	Laboratory Fortified Blank
<i>CCB</i>	Continuing Calibration Blank	<i>LFM</i>	Laboratory Fortified Matrix
<i>CCV</i>	Continuing Calibration Verification standard	<i>LFMD</i>	Laboratory Fortified Matrix Duplicate
<i>DUP</i>	Sample Duplicate	<i>LRB</i>	Laboratory Reagent Blank
<i>ICB</i>	Initial Calibration Blank	<i>MS</i>	Matrix Spike
<i>ICV</i>	Initial Calibration Verification standard	<i>MSD</i>	Matrix Spike Duplicate
<i>ICSAB</i>	Inter-element Correction Standard - A plus B solutions	<i>PBS</i>	Prep Blank - Soil
<i>LCSS</i>	Laboratory Control Sample - Soil	<i>PBW</i>	Prep Blank - Water
<i>LCSSD</i>	Laboratory Control Sample - Soil Duplicate	<i>PQV</i>	Practical Quantitation Verification standard
<i>LCSW</i>	Laboratory Control Sample - Water	<i>SDL</i>	Serial Dilution

**QC Sample Type Explanations**

Blanks	Verifies that there is no or minimal contamination in the prep method or calibration procedure.
Control Samples	Verifies the accuracy of the method, including the prep procedure.
Duplicates	Verifies the precision of the instrument and/or method.
Spikes/Fortified Matrix	Determines sample matrix interferences, if any.
Standard	Verifies the validity of the calibration.

**ACZ Qualifiers (Qual)**

<b>B</b>	Analyte concentration detected at a value between MDL and PQL. The associated value is an estimated quantity.
<b>H</b>	Analysis exceeded method hold time. pH is a field test with an immediate hold time.
<b>L</b>	Target analyte response was below the laboratory defined negative threshold.
<b>U</b>	The material was analyzed for, but was not detected above the level of the associated value. The associated value is either the sample quantitation limit or the sample detection limit.

**Method References**

- (1) EPA 600/4-83-020. Methods for Chemical Analysis of Water and Wastes, March 1983.
- (2) EPA 600/R-93-100. Methods for the Determination of Inorganic Substances in Environmental Samples, August 1993.
- (3) EPA 600/R-94-111. Methods for the Determination of Metals in Environmental Samples - Supplement I, May 1994.
- (4) EPA SW-846. Test Methods for Evaluating Solid Waste.
- (5) Standard Methods for the Examination of Water and Wastewater.

**Comments**

- (1) QC results calculated from raw data. Results may vary slightly if the rounded values are used in the calculations.
- (2) Soil, Sludge, and Plant matrices for Inorganic analyses are reported on a dry weight basis.
- (3) Animal matrices for Inorganic analyses are reported on an "as received" basis.
- (4) An asterisk in the "XQ" column indicates there is an extended qualifier and/or certification qualifier associated with the result.
- (5) If the MDL equals the PQL or the MDL column is omitted, the PQL is the reporting limit.

For a complete list of ACZ's Extended Qualifiers, please click:

<http://www.acz.com/public/extqualist.pdf>

Stewart Environmental Consultants, Inc.

ACZ Project ID: **L38457****Carbon, total organic (TOC)**

SM5310B

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
<b>WG427972</b>													
WG427972ICV	ICV	08/01/17 11:00	WI170707-1	100		104	mg/L	104	90	110			
WG427972ICB	ICB	08/01/17 11:00				U	mg/L		-3	3			
WG427972LFB	LFB	08/01/17 11:00	WI170531-4	50		49.2	mg/L	98	90	110			
L38390-01DUP	DUP	08/01/17 11:00			87.3	91.6	mg/L				5	20	RA
L38391-01AS	AS	08/01/17 11:00	WI170531-4	1000	29.9	1020	mg/L	99	90	110			

Stewart Environmental Consultants, Inc.

ACZ Project ID: **L38457**

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
L38457-01	WG427972	Carbon, total organic (TOC)	SM5310B	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).

Stewart Environmental Consultants, Inc.

Project ID:

Sample ID: MW-20

ACZ Sample ID: L38457-01

Date Sampled: 07/13/17 14:20

Date Received: 07/14/17

Sample Matrix: Waste Water

**Base Neutral Acid Extractables by GC/MS**

Analysis Method: M8270C GC/MS

Extract Method: M3520C

Workgroup: WG427395

Analyst: itm

Extract Date: 07/17/17 13:42

Analysis Date: 07/24/17 15:55

Compound	CAS	Result	QUAL	Dilution	XQ	Units	MDL	PQL
1,2,4-Trichlorobenzene	120-82-1		U	0.93	*	ug/L	2	9
1,2-Dichlorobenzene	95-50-1		U	0.93	*	ug/L	2	9
1,3-Dichlorobenzene	541-73-1		U	0.93	*	ug/L	2	9
1,4-Dichlorobenzene	106-46-7		U	0.93	*	ug/L	2	9
1,4-Dioxane	123-91-1		U	0.93	*	ug/L	2	9
2,4,5-Trichlorophenol	95-95-4		U	0.93	*	ug/L	9	50
2,4,6-Trichlorophenol	88-06-2		U	0.93	*	ug/L	2	9
2,4-Dichlorophenol	120-83-2		U	0.93	*	ug/L	2	9
2,4-Dimethylphenol	105-67-9		U	0.93	*	ug/L	4	20
2,4-Dinitrophenol	51-28-5		U	0.93	*	ug/L	20	50
2,4-Dinitrotoluene	121-14-2		U	0.93	*	ug/L	2	9
2,6-Dinitrotoluene	606-20-8		U	0.93	*	ug/L	9	50
2-Chloronaphthalene	91-58-7		U	0.93	*	ug/L	2	9
2-Chlorophenol	95-57-8		U	0.93	*	ug/L	2	9
2-Methylnaphthalene	91-57-6		U	0.93	*	ug/L	2	9
2-Methylphenol	95-48-7		U	0.93	*	ug/L	2	9
2-Nitroaniline	88-74-4		U	0.93	*	ug/L	9	50
2-Nitrophenol	88-75-5		U	0.93	*	ug/L	4	20
3- & 4-Methylphenol	1319-77-3		U	0.93	*	ug/L	4	20
3,3-Dichlorobenzidine	91-94-1		U	0.93	*	ug/L	20	50
3-Nitroaniline	99-09-2		U	0.93	*	ug/L	9	50
4,6-Dinitro-2-methylphenol	534-52-1		U	0.93	*	ug/L	9	50
4-Bromophenyl phenyl ether	101-55-3		U	0.93	*	ug/L	2	9
4-Chloro-3-methylphenol	59-50-7		U	0.93	*	ug/L	2	9
4-Chloroaniline	106-47-8		U	0.93	*	ug/L	2	9
4-Chlorophenyl phenyl ether	7005-72-3		U	0.93	*	ug/L	2	9
4-Nitroaniline	100-01-6		U	0.93	*	ug/L	9	50
4-Nitrophenol	100-02-07		U	0.93	*	ug/L	9	50
Acenaphthene	83-32-9		U	0.93	*	ug/L	2	9
Acenaphthylene	208-96-8		U	0.93	*	ug/L	2	9
Aniline	62-53-3		U	0.93	*	ug/L	9	50
Anthracene	120-12-7		U	0.93	*	ug/L	2	9
Azobenzene	103-33-3		U	0.93	*	ug/L	9	50
Benzidine	92-87-5		U	0.93	*	ug/L	4	20
Benzo(a)anthracene	56-55-3		U	0.93	*	ug/L	2	9
Benzo(a)pyrene	50-32-8		U	0.93	*	ug/L	2	9
Benzo(b)fluoranthene	205-99-2		U	0.93	*	ug/L	2	9
Benzo(g,h,i)perylene	191-24-2	3	J	0.93	*	ug/L	2	9
Benzo(k)fluoranthene	207-08-9		U	0.93	*	ug/L	2	9
Benzoic Acid	65-85-0	20	J	0.93	*	ug/L	20	50
Benzyl alcohol	100-51-6		U	0.93	*	ug/L	2	9

Stewart Environmental Consultants, Inc.

Project ID:

Sample ID: MW-20

ACZ Sample ID: L38457-01

Date Sampled: 07/13/17 14:20

Date Received: 07/14/17

Sample Matrix: Waste Water

Bis(2-chloroethoxy)methane	111-91-1	U	0.93	*	ug/L	2	9
Bis(2-chloroethyl) ether	111-44-4	U	0.93	*	ug/L	2	9
Bis(2-chloroisopropyl) ether	108-60-1	U	0.93	*	ug/L	2	9
Bis(2-ethylhexyl) phthalate	117-81-7	U	0.93	*	ug/L	4	20
Butyl benzyl phthalate	85-68-7	U	0.93	*	ug/L	2	9
Chrysene	218-01-9	U	0.93	*	ug/L	2	9
Dibenzo(a,h)anthracene	53-70-3	U	0.93	*	ug/L	2	9
Dibenzofuran	132-64-9	U	0.93	*	ug/L	2	9
Diethylphthalate	84-66-2	U	0.93	*	ug/L	2	9
Dimethyl phthalate	131-11-3	U	0.93	*	ug/L	2	9
Di-n-butyl phthalate	84-74-2	U	0.93	*	ug/L	2	9
Di-n-octyl phthalate	117-84-0	U	0.93	*	ug/L	2	9
Fluoranthene	206-44-0	U	0.93	*	ug/L	2	9
Fluorene	86-73-7	U	0.93	*	ug/L	2	9
Hexachlorobenzene	118-74-1	U	0.93	*	ug/L	2	9
Hexachlorobutadiene	87-68-3	U	0.93	*	ug/L	2	9
Hexachlorocyclopentadiene	77-47-4	U	0.93	*	ug/L	4	20
Hexachloroethane	67-72-1	U	0.93	*	ug/L	2	9
Indeno(1,2,3-cd)pyrene	193-39-5	U	0.93	*	ug/L	2	9
Isophorone	78-59-1	U	0.93	*	ug/L	2	9
Naphthalene	91-20-3	U	0.93	*	ug/L	2	9
Nitrobenzene	98-95-3	U	0.93	*	ug/L	2	9
N-Nitrosodimethylamine	62-75-9	U	0.93	*	ug/L	9	50
N-Nitrosodi-n-propylamine	621-64-7	U	0.93	*	ug/L	2	9
N-Nitrosodiphenylamine	86-30-6	U	0.93	*	ug/L	2	9
Pentachlorophenol	87-86-5	U	0.93	*	ug/L	9	50
Phenanthrene	85-01-8	U	0.93	*	ug/L	2	9
Phenol	108-95-2	U	0.93	*	ug/L	4	20
Pyrene	129-00-0	U	0.93	*	ug/L	2	9
Surrogate Recoveries	CAS	% Recovery	Dilution	XQ	Units	LCL	UCL
2,4,6-Tribromophenol	118-79-6	92.9	0.93	*	%	40	125
2-Fluorobiphenyl	321-60-8	77.7	0.93	*	%	50	110
2-Fluorophenol	367-12-4	62.3	0.93	*	%	54	100
Nitrobenzene-d5	4165-60-0	74.1	0.93	*	%	40	110
Phenol-d6	13127-88-3	72	0.93	*	%	47	113
Terphenyl-d14	1718-51-0	74.7	0.93	*	%	50	135

Arizona license number: AZ0102

**Report Header Explanations**

<i>Batch</i>	A distinct set of samples analyzed at a specific time
<i>Found</i>	Value of the QC Type of interest
<i>Limit</i>	Upper limit for RPD, in %.
<i>Lower</i>	Lower Recovery Limit, in % (except for LCSS, mg/Kg)
<i>LCL</i>	Lower Control Limit
<i>MDL</i>	Method Detection Limit. Same as Minimum Reporting Limit unless omitted or equal to the PQL (see comment #4) Allows for instrument and annual fluctuations.
<i>PCN/SCN</i>	A number assigned to reagents/standards to trace to the manufacturer's certificate of analysis
<i>PQL</i>	Practical Quantitation Limit. Synonymous with the EPA term "minimum level".
<i>QC</i>	True Value of the Control Sample or the amount added to the Spike
<i>Rec</i>	Amount of the true value or spike added recovered, in % (except for LCSS, mg/Kg)
<i>RPD</i>	Relative Percent Difference, calculation used for Duplicate QC Types
<i>Upper</i>	Upper Recovery Limit, in % (except for LCSS, mg/Kg)
<i>UCL</i>	Upper Control Limit
<i>Sample</i>	Value of the Sample of interest

**QC Sample Types**

<i>SURR</i>	Surrogate	<i>LFM</i>	Laboratory Fortified Matrix
<i>INTS</i>	Internal Standard	<i>LFMD</i>	Laboratory Fortified Matrix Duplicate
<i>DUP</i>	Sample Duplicate	<i>LRB</i>	Laboratory Reagent Blank
<i>LCSS</i>	Laboratory Control Sample - Soil	<i>MS/MSD</i>	Matrix Spike/Matrix Spike Duplicate
<i>LCSW</i>	Laboratory Control Sample - Water	<i>PBS</i>	Prep Blank - Soil
<i>LFB</i>	Laboratory Fortified Blank	<i>PBW</i>	Prep Blank - Water

**QC Sample Type Explanations**

Blanks	Verifies that there is no or minimal contamination in the prep method or calibration procedure.
Control Samples	Verifies the accuracy of the method, including the prep procedure.
Duplicates	Verifies the precision of the instrument and/or method.
Spikes/Fortified Matrix	Determines sample matrix interferences, if any.

**ACZ Qualifiers (Qual)**

B	Analyte concentration detected at a value between MDL and PQL. The associated value is an estimated quantity.
O	Analyte concentration is estimated due to result exceeding calibration range.
H	Analysis exceeded method hold time. pH is a field test with an immediate hold time.
J	Analyte concentration detected at a value between MDL and PQL. The associated value is an estimated quantity.
L	Target analyte response was below the laboratory defined negative threshold.
U	The material was analyzed for, but was not detected above the level of the associated value. The associated value is either the sample quantitation limit or the sample detection limit.

**Method References**

- (1) EPA 600/4-83-020. Methods for Chemical Analysis of Water and Wastes, March 1983.
- (2) EPA 600/4-90/020. Methods for the Determination of Organic Compounds in Drinking Water (I), July 1990.
- (3) EPA 600/R-92/129. Methods for the Determination of Organic Compounds in Drinking Water (II), July 1990.
- (4) EPA SW-846. Test Methods for Evaluating Solid Waste.
- (5) Standard Methods for the Examination of Water and Wastewater.

**Comments**

- (1) QC results calculated from raw data. Results may vary slightly if the rounded values are used in the calculations.
- (2) Excluding Oil & Grease, solid & biological matrices for organic analyses are reported on a wet weight basis.
- (3) An asterisk in the "XQ" column indicates there is an extended qualifier and/or certification qualifier associated with the result.
- (4) If the MDL equals the PQL or the MDL column is omitted, the PQL is the reporting limit.

For a complete list of ACZ's Extended Qualifiers, please click:

<http://www.acz.com/public/extquallist.pdf>

Stewart Environmental Consultants, Inc.

ACZ Project ID: L38457

### Base Neutral Acid Extractables by GC/MS

M8270C GC/MS

WG427395

MS	Sample ID: L38390-01MS			PCN/SCN: OPBNA170523-1				Analyzed:		07/21/17 15:50	
Compound	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual	
1,2,4-TRICHLOROBENZENE	50013	U	25	ug/L	53.0	35	105				
1,4-DICHLOROBENZENE	50013	U	28.6	ug/L	61.0	30	100				
2,4-DINITROTOLUENE	50013	U	34.9	ug/L	74.0	50	120				
2-CHLOROPHENOL	75080	U	50.1	ug/L	71.0	35	105				
4-CHLORO-3-METHYLPHENOL	75040	U	61.1	ug/L	86.0	45	110				
4-NITROPHENOL	75120	U	67	ug/L	95.0	0	125				
ACENAPHTHENE	50007	U	24.5	ug/L	52.0	45	110				
N-NITROSODI-N-PROPYLAMINE	50027	U	35.7	ug/L	76.0	35	130				
PENTACHLOROPHENOL	75040	U	31	ug/L	44.0	40	115				
PHENOL	75060	U	52.7	ug/L	74.0	0	115				
PYRENE	50003	U	U	ug/L	0.0	50	130			M2	
2,4,6-TRIBROMOPHENOL (surr)				%	77.9	40	125				
2-FLUOROBIPHENYL (surr)				%	61.0	50	110				
2-FLUOROPHENOL (surr)				%	71.0	54	100				
NITROBENZENE-D5 (surr)				%	79.2	40	110				
PHENOL-D6 (surr)				%	83.8	47	113				
TERPHENYL-D14 (surr)				%	10.1	50	135			S6	

DUP	Sample ID: L38391-01DUP					Analyzed:			07/21/17 16:57	
Compound	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
1,2,4-TRICHLOROBENZENE		U	U	ug/L				0	20	RA
1,2-DICHLOROBENZENE		U	U	ug/L				0	20	RA
1,3-DICHLOROBENZENE		U	U	ug/L				0	20	RA
1,4-DICHLOROBENZENE		U	4	ug/L				200	20	RA
1,4-DIOXANE		12	12.4	ug/L				3	20	RA
2,4,5-TRICHLOROPHENOL		U	U	ug/L				0	20	RA
2,4,6-TRICHLOROPHENOL		U	U	ug/L				0	20	RA
2,4-DICHLOROPHENOL		U	U	ug/L				0	20	RA
2,4-DIMETHYLPHENOL		U	U	ug/L				0	20	RA
2,4-DINITROPHENOL		U	U	ug/L				0	20	RA
2,4-DINITROTOLUENE		U	U	ug/L				0	20	RA
2,6-DINITROTOLUENE		U	U	ug/L				0	20	RA
2-CHLORONAPHTHALENE		U	U	ug/L				0	20	RA
2-CHLOROPHENOL		U	U	ug/L				0	20	RA
2-METHYLNAPHTHALENE		U	U	ug/L				0	20	RA
2-METHYLPHENOL		U	U	ug/L				0	20	RA
2-NITROANILINE		U	U	ug/L				0	20	RA
2-NITROPHENOL		U	U	ug/L				0	20	RA
3- & 4-METHYLPHENOL		U	U	ug/L				0	20	RA
3,3-DICHLOROBENZIDINE		U	U	ug/L				0	20	RA
3-NITROANILINE		U	U	ug/L				0	20	RA
4,6-DINITRO-2-METHYLPHENOL		U	U	ug/L				0	20	RA
4-BROMOPHENYL PHENYL ETHER		U	U	ug/L				0	20	RA
4-CHLORO-3-METHYLPHENOL		U	U	ug/L				0	20	RA

Stewart Environmental Consultants, Inc.

ACZ Project ID: **L38457**

4-CHLOROANILINE	U	U	ug/L	0	20	RA
4-CHLOROPHENYL PHENYL ETHER	U	U	ug/L	0	20	RA
4-NITROANILINE	U	U	ug/L	0	20	RA
4-NITROPHENOL	U	U	ug/L	0	20	RA
ACENAPHTHENE	U	U	ug/L	0	20	RA
ACENAPHTHYLENE	U	U	ug/L	0	20	RA
ANILINE	U	U	ug/L	0	20	RA
ANTHRACENE	U	U	ug/L	0	20	RA
AZOBENZENE	U	U	ug/L	0	20	RA
BENZIDINE	U	U	ug/L	0	20	RA
BENZO(A)ANTHRACENE	U	U	ug/L	0	20	RA
BENZO(A)PYRENE	U	U	ug/L	0	20	RA
BENZO(B)FLUORANTHENE	U	U	ug/L	0	20	RA
BENZO(G,H,I)PERYLENE	U	U	ug/L	0	20	RA
BENZO(K)FLUORANTHENE	U	U	ug/L	0	20	RA
BENZOIC ACID	U	U	ug/L	0	20	RA
BENZYL ALCOHOL	U	U	ug/L	0	20	RA
BIS(2-CHLOROETHOXY)METHANE	U	U	ug/L	0	20	RA
BIS(2-CHLOROETHYL) ETHER	U	U	ug/L	0	20	RA
BIS(2-CHLOROISOPROPYL) ETHER	U	U	ug/L	0	20	RA
BIS(2-ETHYLHEXYL) PHTHALATE	U	U	ug/L	0	20	RA
BUTYL BENZYL PHTHALATE	U	U	ug/L	0	20	RA
CHRYSENE	U	U	ug/L	0	20	RA
DIBENZO(A,H)ANTHRACENE	U	U	ug/L	0	20	RA
DIBENZOFURAN	U	U	ug/L	0	20	RA
DIETHYLPHTHALATE	U	U	ug/L	0	20	RA
DIMETHYL PHTHALATE	U	U	ug/L	0	20	RA
DI-N-BUTYL PHTHALATE	U	U	ug/L	0	20	RA
DI-N-OCTYL PHTHALATE	U	U	ug/L	0	20	RA
FLUORANTHENE	U	U	ug/L	0	20	RA
FLUORENE	U	U	ug/L	0	20	RA
HEXACHLOROBENZENE	U	U	ug/L	0	20	RA
HEXACHLOROBUTADIENE	U	U	ug/L	0	20	RA
HEXACHLOROCYCLOPENTADIENE	U	U	ug/L	0	20	RA
HEXACHLOROETHANE	U	U	ug/L	0	20	RA
INDENO(1,2,3-CD)PYRENE	U	U	ug/L	0	20	RA
ISOPHORONE	U	U	ug/L	0	20	RA
NAPHTHALENE	U	U	ug/L	0	20	RA
NITROBENZENE	U	U	ug/L	0	20	RA
N-NITROSODIMETHYLAMINE	U	U	ug/L	0	20	RA
N-NITROSODI-N-PROPYLAMINE	U	U	ug/L	0	20	RA
N-NITROSODIPHENYLAMINE	U	U	ug/L	0	20	RA
PENTACHLOROPHENOL	U	U	ug/L	0	20	RA
PHENANTHRENE	U	U	ug/L	0	20	RA
PHENOL	U	U	ug/L	0	20	RA
PYRENE	U	U	ug/L	0	20	RA
2,4,6-TRIBROMOPHENOL (surr)			%	94.5	40	125
2-FLUOROBIPHENYL (surr)			%	76.0	50	110
2-FLUOROPHENOL (surr)			%	71.5	54	100



Stewart Environmental Consultants, Inc.

ACZ Project ID: **L38457**

NITROBENZENE-D5 (surr)	%	77.3	40	110	
PHENOL-D6 (surr)	%	83.6	47	113	
TERPHENYL-D14 (surr)	%	20.4	50	135	S6

LCSW		Sample ID: WG426931LCSW		PCN/SCN: OPBNA170523-1			Analyzed: 07/21/17 14:10			
Compound	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
1,2,4-TRICHLOROBENZENE	50013		33.2	ug/L	66.0	35	105			
1,4-DICHLOROBENZENE	50013		31.7	ug/L	63.0	30	100			
2,4-DINITROTOLUENE	50013		43.3	ug/L	87.0	50	120			
2-CHLOROPHENOL	75080		53.5	ug/L	71.0	35	105			
4-CHLORO-3-METHYLPHENOL	75040		58.4	ug/L	78.0	45	110			
4-NITROPHENOL	75120		59	ug/L	79.0	0	125			
ACENAPHTHENE	50007		38	ug/L	76.0	45	110			
N-NITROSODI-N-PROPYLAMINE	50027		38.4	ug/L	77.0	35	130			
PENTACHLOROPHENOL	75040		55	ug/L	73.0	40	115			
PHENOL	75060		53.4	ug/L	71.0	0	115			
PYRENE	50003		41.7	ug/L	83.0	50	130			
2,4,6-TRIBROMOPHENOL (surr)				%	90.8	40	125			
2-FLUOROBIPHENYL (surr)				%	79.8	50	110			
2-FLUOROPHENOL (surr)				%	72.8	54	100			
NITROBENZENE-D5 (surr)				%	82.1	40	110			
PHENOL-D6 (surr)				%	80.5	47	113			
TERPHENYL-D14 (surr)				%	95.3	50	135			

LCSWD		Sample ID: WG426931LCSWD		PCN/SCN: OPBNA170523-1			Analyzed: 07/21/17 14:44			
Compound	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
1,2,4-TRICHLOROBENZENE	50013		35.1	ug/L	70.0	35	105	6	20	
1,4-DICHLOROBENZENE	50013		34.5	ug/L	69.0	30	100	8	20	
2,4-DINITROTOLUENE	50013		44.1	ug/L	88.0	50	120	2	20	
2-CHLOROPHENOL	75080		56.5	ug/L	75.0	35	105	5	20	
4-CHLORO-3-METHYLPHENOL	75040		60	ug/L	80.0	45	110	3	20	
4-NITROPHENOL	75120		58	ug/L	77.0	0	125	2	20	
ACENAPHTHENE	50007		40.4	ug/L	81.0	45	110	6	20	
N-NITROSODI-N-PROPYLAMINE	50027		40.6	ug/L	81.0	35	130	6	20	
PENTACHLOROPHENOL	75040		56	ug/L	75.0	40	115	2	20	
PHENOL	75060		54.6	ug/L	73.0	0	115	2	20	
PYRENE	50003		42.6	ug/L	85.0	50	130	2	20	
2,4,6-TRIBROMOPHENOL (surr)				%	88.8	40	125			
2-FLUOROBIPHENYL (surr)				%	80.6	50	110			
2-FLUOROPHENOL (surr)				%	71.6	54	100			
NITROBENZENE-D5 (surr)				%	82.5	40	110			
PHENOL-D6 (surr)				%	77.1	47	113			
TERPHENYL-D14 (surr)				%	93.7	50	135			

PBW		Sample ID: WG426931PBW					Analyzed: 07/21/17 13:37			
Compound	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
1,2,4-TRICHLOROBENZENE			U	ug/L		-10	10			
1,2-DICHLOROBENZENE			U	ug/L		-10	10			
1,3-DICHLOROBENZENE			U	ug/L		-10	10			

Stewart Environmental Consultants, Inc.

ACZ Project ID: **L38457**

1,4-DICHLOROBENZENE	U	ug/L	-10	10
1,4-DIOXANE	U	ug/L	-10	10
2,4,5-TRICHLOROPHENOL	U	ug/L	-50	50
2,4,6-TRICHLOROPHENOL	U	ug/L	-10	10
2,4-DICHLOROPHENOL	U	ug/L	-10	10
2,4-DIMETHYLPHENOL	U	ug/L	-20	20
2,4-DINITROPHENOL	U	ug/L	-50	50
2,4-DINITROTOLUENE	U	ug/L	-10	10
2,6-DINITROTOLUENE	U	ug/L	-50	50
2-CHLORONAPHTHALENE	U	ug/L	-10	10
2-CHLOROPHENOL	U	ug/L	-10	10
2-METHYLNAPHTHALENE	U	ug/L	-10	10
2-METHYLPHENOL	U	ug/L	-10	10
2-NITROANILINE	U	ug/L	-50	50
2-NITROPHENOL	U	ug/L	-20	20
3- & 4-METHYLPHENOL	U	ug/L	-20	20
3,3-DICHLOROBENZIDINE	U	ug/L	-50	50
3-NITROANILINE	U	ug/L	-50	50
4,6-DINITRO-2-METHYLPHENOL	U	ug/L	-50	50
4-BROMOPHENYL PHENYL ETHER	U	ug/L	-10	10
4-CHLORO-3-METHYLPHENOL	U	ug/L	-10	10
4-CHLOROANILINE	U	ug/L	-10	10
4-CHLOROPHENYL PHENYL ETHER	U	ug/L	-10	10
4-NITROANILINE	U	ug/L	-50	50
4-NITROPHENOL	U	ug/L	-50	50
ACENAPHTHENE	U	ug/L	-10	10
ACENAPHTHYLENE	U	ug/L	-10	10
ANILINE	U	ug/L	-50	50
ANTHRACENE	U	ug/L	-10	10
AZOBENZENE	U	ug/L	-50	50
BENZIDINE	U	ug/L	-20	20
BENZO(A)ANTHRACENE	U	ug/L	-10	10
BENZO(A)PYRENE	U	ug/L	-10	10
BENZO(B)FLUORANTHENE	U	ug/L	-10	10
BENZO(G,H,I)PERYLENE	U	ug/L	-10	10
BENZO(K)FLUORANTHENE	U	ug/L	-10	10
BENZOIC ACID	U	ug/L	-50	50
BENZYL ALCOHOL	U	ug/L	-10	10
BIS(2-CHLOROETHOXY)METHANE	U	ug/L	-10	10
BIS(2-CHLOROETHYL) ETHER	U	ug/L	-10	10
BIS(2-CHLOROISOPROPYL) ETHER	U	ug/L	-10	10
BIS(2-ETHYLHEXYL) PHTHALATE	U	ug/L	-20	20
BUTYL BENZYL PHTHALATE	U	ug/L	-10	10
CHRYSENE	U	ug/L	-10	10
DIBENZO(A,H)ANTHRACENE	U	ug/L	-10	10
DIBENZOFURAN	U	ug/L	-10	10
DIETHYLPHTHALATE	U	ug/L	-10	10
DIMETHYL PHTHALATE	U	ug/L	-10	10
DI-N-BUTYL PHTHALATE	U	ug/L	-10	10

Stewart Environmental Consultants, Inc.

ACZ Project ID: **L38457**

DI-N-OCTYL PHTHALATE	U	ug/L	-10	10	
FLUORANTHENE	U	ug/L	-10	10	
FLUORENE	U	ug/L	-10	10	
HEXACHLOROBENZENE	U	ug/L	-10	10	
HEXACHLOROBUTADIENE	U	ug/L	-10	10	
HEXACHLOROCYCLOPENTADIENE	U	ug/L	-20	20	
HEXACHLOROETHANE	U	ug/L	-10	10	
INDENO(1,2,3-CD)PYRENE	U	ug/L	-10	10	
ISOPHORONE	U	ug/L	-10	10	
NAPHTHALENE	U	ug/L	-10	10	
NITROBENZENE	U	ug/L	-10	10	
N-NITROSODIMETHYLAMINE	U	ug/L	-50	50	
N-NITROSODI-N-PROPYLAMINE	U	ug/L	-10	10	
N-NITROSODIPHENYLAMINE	U	ug/L	-10	10	
PENTACHLOROPHENOL	U	ug/L	-50	50	
PHENANTHRENE	U	ug/L	-10	10	
PHENOL	U	ug/L	-20	20	
PYRENE	U	ug/L	-10	10	
2,4,6-TRIBROMOPHENOL (surr)		%	77.4	40	125
2-FLUOROBIPHENYL (surr)		%	74.9	50	110
2-FLUOROPHENOL (surr)		%	71.1	54	100
NITROBENZENE-D5 (surr)		%	77.2	40	110
PHENOL-D6 (surr)		%	77.3	47	113
TERPHENYL-D14 (surr)		%	91.2	50	135

ACZ Project ID: **L38457**

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
L38457-01	WG427395	*All Compounds*	M8270C GC/MS	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
		Pyrene	M8270C GC/MS	M2	Matrix spike recovery was low, the recovery of the associated control sample (LCS or LFB) was acceptable.

**Stewart Environmental Consultants, Inc.**

ACZ Project ID: **L38457**

**GC/MS**

The following parameters are not offered for certification or are not covered by NELAC certificate #ACZ.

1,4-Dioxane

M8270C GC/MS

**Stewart Environmental Consultants, Inc.**

ACZ Project ID: L38457

Date Received: 07/14/2017 10:31

Received By:

Date Printed: 7/14/2017

**Receipt Verification**

	YES	NO	NA
1) Is a foreign soil permit included for applicable samples?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
2) Is the Chain of Custody form or other directive shipping papers present?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3) Does this project require special handling procedures such as CLP protocol?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
4) Are any samples NRC licensable material?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
5) If samples are received past hold time, proceed with requested short hold time analyses?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6) Is the Chain of Custody form complete and accurate?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7) Were any changes made to the Chain of Custody form prior to ACZ receiving the samples?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

**Samples/Containers**

	YES	NO	NA
8) Are all containers intact and with no leaks?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9) Are all labels on containers and are they intact and legible?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
10) Do the sample labels and Chain of Custody form match for Sample ID, Date, and Time?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
11) For preserved bottle types, was the pH checked and within limits? <sup>1</sup>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
12) Is there sufficient sample volume to perform all requested work?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
13) Is the custody seal intact on all containers?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
14) Are samples that require zero headspace acceptable?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
15) Are all sample containers appropriate for analytical requirements?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
16) Is there an Hg-1631 trip blank present?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
17) Is there a VOA trip blank present?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
18) Were all samples received within hold time?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

**Chain of Custody Related Remarks**

**Client Contact Remarks**

**Shipping Containers**

Cooler Id	Temp (°C)	Temp Criteria (°C)	Rad (µR/Hr)	Custody Seal Intact?
3226	0.7	<=6.0	13	N/A

Was ice present in the shipment container(s)?

Yes - Wet ice was present in the shipment container(s).

Client must contact an ACZ Project Manager if analysis should not proceed for samples received outside of their thermal preservation acceptance criteria.

**Stewart Environmental Consultants, Inc.**

ACZ Project ID: L38457

Date Received: 07/14/2017 10:31

Received By:

Date Printed: 7/14/2017

<sup>1</sup> The preservation of the following bottle types is not checked at sample receipt: Orange (oil and grease), Purple (total cyanide), Pink (dissolved cyanide), Brown (arsenic speciation), Sterile (fecal coliform), EDTA (sulfite), HCl preserved vial (organics), Na<sub>2</sub>S<sub>2</sub>O<sub>3</sub> preserved vial (organics), and HG-1631 (total/dissolved mercury by method 1631).



L38457 Chain of Custody

638457



## CHAIN OF CUSTODY RECORD

STEWART ENVIRONMENTAL CONSULTANTS, INC.  
3801 Automation Way, Suite 200, Fort Collins, CO 80525

Batch:

Telephone: (970) 226-5500

Facsimile: (

PAGE \_\_\_\_ OF \_\_\_\_

EC USE ONLY		CLIENT: <b>Stratus Companies - ACZ</b>						SAMPLER Name: <u>James Stewart</u>	
Client No.							Signature: <u>[Signature]</u>		
Sample No.	SAMPLE COLLECTION INFO			CLIENT SAMPLE IDENTIFICATION	Matrix Type	QC Report Needed	Total No. of Cont.	ANALYSES REQUESTED	
<b>S10-</b>	Date	Time	Grab / Comp						
	7-13-17	14:26	G	MW-20	WW		3	Method 8270 (all normal compounds, including those below)	
								Total Organic Carbon	
								Benzyl Butyl Phthalate	
								Bis(2-ethylhexyl) phthalate	
								Di-n-butyl Phthalate	
								Diethyl Phthalate	
								Dimethyl Phthalate	
								Di-n-octyl Phthalate	
								1,4-Dioxane	
								Benzoic Acid	
								Bencyl alcohol	
								2-Methylphenol	
Compliance samples may require you to report the temperature of samples as they arrive in the laboratory. Would you like the temperature of samples recorded upon receipt by the lab? Leaving this field blank implies that the incoming temperature is not requested.									
RELINQUISHED BY	DATE / TIME	Received by	Date / Time	REQUESTED COMPLETION DATE		REPORT TO:			
<u>[Signature]</u>	7-13-17 16:50	CTF 7/13/17	1550			PHONE:			
Relinquished by	Date / Time	Received by	Date / Time	MATRIX TYPE		CLIENT:			
CTF 7/13/17	16:30	ML	7-14-17	WW = waste water DW = drinking water L = Liquid		ADDRESS:			
Relinquished by	Date / Time	Received by	Date / Time	S = soil SL = sludge A = Air SD = Solid		CITY, STATE ZIP:			
				CDPHE REPORT REQUIRED		INVOICE TO:			
Database Entry By	Date			PWSID #		ADDRESS:			
				Sample Kit Sent? Yes / No		CITY, STATE ZIP:			



# TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

## ANALYTICAL REPORT

TestAmerica Laboratories, Inc.

TestAmerica Denver

4955 Yarrow Street

Arvada, CO 80002

Tel: (303)736-0100

TestAmerica Job ID: 280-99137-1

Client Project/Site: Analytical Testing

For:

Stewart Environmental Consultants Inc

748 Whalers Way

Unit 210

Fort Collins, Colorado 80525

Attn: Mr. Trevor Mueller



Authorized for release by:

7/19/2017 10:54:48 AM

Stephanie Rothmeyer, Project Manager I

(303)736-0182

stephanie.rothmeyer@testamericainc.com

### LINKS

Review your project  
results through

**TotalAccess**

Have a Question?



Visit us at:

[www.testamericainc.com](http://www.testamericainc.com)

*The test results in this report meet all 2003 NELAC and 2009 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.*

*This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.*

*Results relate only to the items tested and the sample(s) as received by the laboratory.*

1

2

3

4

5

6

7

8

9

10

11

12

13

14

15

# Table of Contents

Cover Page . . . . .	1
Table of Contents . . . . .	2
Definitions . . . . .	3
Case Narrative . . . . .	4
Detection Summary . . . . .	6
Method Summary . . . . .	8
Sample Summary . . . . .	9
Client Sample Results . . . . .	10
Surrogate Summary . . . . .	22
QC Sample Results . . . . .	23
QC Association . . . . .	32
Chronicle . . . . .	33
Certification Summary . . . . .	35
Chain of Custody . . . . .	36
Receipt Checklists . . . . .	43



## Definitions/Glossary

Client: Stewart Environmental Consultants Inc  
Project/Site: Analytical Testing

TestAmerica Job ID: 280-99137-1

### Qualifiers

#### GC/MS VOA

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
*	LCS or LCSD is outside acceptance limits.
F2	MS/MSD RPD exceeds control limits
4	MS, MSD: The analyte present in the original sample is greater than 4 times the matrix spike concentration; therefore, control limits are not applicable.

### Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
α	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

## Case Narrative

Client: Stewart Environmental Consultants Inc  
Project/Site: Analytical Testing

TestAmerica Job ID: 280-99137-1

Job ID: 280-99137-1

Laboratory: TestAmerica Denver

### Narrative

## CASE NARRATIVE

Client: Stewart Environmental Consultants Inc

Project: Analytical Testing

Report Number: 280-99137-1

With the exceptions noted as flags or footnotes, standard analytical protocols were followed in the analysis of the samples and no problems were encountered or anomalies observed. In addition all laboratory quality control samples were within established control limits, with any exceptions noted below. Each sample was analyzed to achieve the lowest possible reporting limit within the constraints of the method. In some cases, due to interference or analytes present at high concentrations, samples were diluted. For diluted samples, the reporting limits are adjusted relative to the dilution required.

Calculations are performed before rounding to avoid round-off errors in calculated results.

All holding times were met and proper preservation noted for the methods performed on these samples, unless otherwise detailed in the individual sections below.

### RECEIPT

The samples were received on 7/12/2017 at 3:15 PM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 2.7° C.

Three of three HCl preserved VOA vials requesting 8260B VOCs analysis for sample MW-15 (280-99137-2) were received with a headspace bubble greater than 6mm in diameter. It can be noted that analysis results may be biased low due to headspace. The client was notified on 7/13/17.

Three of six HCl preserved VOA vials requesting 8260B VOCs analysis for the following sample and MS/MSD were received with a headspace bubble greater than 6mm in diameter: MW-16 (280-99137-7), MW-16 (280-99137-7[MS]) and MW-16 (280-99137-7[MSD]). Sufficient non-biased sample volume was received to perform the requested analysis. However, re-analysis may be biased low if requested or required due to headspace. The client was notified on 7/13/17.

The laboratory received a total of six HCl preserved VOA vials for the following sample, however no MS/MSD was requested on the Chain-of-Custody: MW-16 (280-99137-7). Per the extra volume received, a MS/MSD was logged for the parent sample for 8260B - VOC analysis. The client was notified on 7/13/17.

### VOLATILE ORGANIC COMPOUNDS (GC-MS)

Samples MW-6 (280-99137-1), MW-15 (280-99137-2), MW-11 (280-99137-3), MW-3 (280-99137-4), MW-12 (280-99137-5), MW-1 (280-99137-6) and MW-16 (280-99137-7) were analyzed for volatile organic compounds (GC-MS) in accordance with EPA SW-846 Method 8260B. The samples were analyzed on 07/17/2017.

2-Pentanone failed the recovery criteria high for LCS 280-380948/4 and LCSD 280-380948/5. This analyte was biased high in the LCS and was not detected in the associated samples; therefore, the data have been reported.

Trichloroethene failed the recovery criteria low for the MS of sample MW-16 (280-99137-7) in batch 280-380948. 4-Isopropyltoluene exceeded the RPD limit for the MSD of sample MW-16 (280-99137-7) in batch 280-380948. The presence of the '4' qualifier indicates analytes where the concentration in the unspiked sample exceeded four times the spiking amount. Refer to the QC report for details.

Samples MW-12 (280-99137-5)[2X] and MW-16 (280-99137-7)[100X] required dilution prior to analysis to bring the concentration of target analytes within the calibration range. The reporting limits have been adjusted accordingly.

The continuing calibration verification (CCV) associated with batch 380948 recovered above the upper control limit for Chloromethane and/or Dichlorodifluoromethane. The bias is high and the samples associated with this CCV were non-detect for the affected analytes;

## Case Narrative

Client: Stewart Environmental Consultants Inc  
Project/Site: Analytical Testing

TestAmerica Job ID: 280-99137-1

---

### Job ID: 280-99137-1 (Continued)

---

#### Laboratory: TestAmerica Denver (Continued)

therefore, the data have been reported.

The following samples were received in HCl acid-preserved vials with an expected pH<2, but an observed pH of ~3 and ~7, respectively: MW-12 (280-99137-5), MW-16 (280-99137-7). Sample #5 was analyzed with 7 days of being sampled, but sample #7 (MS/MSD) was not.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

## Detection Summary

Client: Stewart Environmental Consultants Inc  
Project/Site: Analytical Testing

TestAmerica Job ID: 280-99137-1

### Client Sample ID: MW-6

Lab Sample ID: 280-99137-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
1,1-Dichloroethane	0.50	J	1.0	0.22	ug/L	1		8260B	Total/NA
1,2-Dichloroethene, Total	1.6		1.0	0.24	ug/L	1		8260B	Total/NA
1,4-Dichlorobenzene	1.2		1.0	0.16	ug/L	1		8260B	Total/NA
Acetone	4.1	J	10	1.9	ug/L	1		8260B	Total/NA
Benzene	0.37	J	1.0	0.16	ug/L	1		8260B	Total/NA
cis-1,2-Dichloroethene	1.6		1.0	0.15	ug/L	1		8260B	Total/NA
Dichlorodifluoromethane	0.81	J	2.0	0.31	ug/L	1		8260B	Total/NA
Tetrachloroethene	0.55	J	1.0	0.20	ug/L	1		8260B	Total/NA
Trichloroethene	0.60	J	1.0	0.16	ug/L	1		8260B	Total/NA
Vinyl chloride	2.2		1.0	0.10	ug/L	1		8260B	Total/NA

### Client Sample ID: MW-15

Lab Sample ID: 280-99137-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
4-Methyl-2-pentanone (MIBK)	1.9	J	5.0	0.98	ug/L	1		8260B	Total/NA
Acetone	42		10	1.9	ug/L	1		8260B	Total/NA

### Client Sample ID: MW-11

Lab Sample ID: 280-99137-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
1,2,4-Trimethylbenzene	0.17	J	1.0	0.15	ug/L	1		8260B	Total/NA
1,4-Dichlorobenzene	4.9		1.0	0.16	ug/L	1		8260B	Total/NA
4-Isopropyltoluene	0.37	J	1.0	0.20	ug/L	1		8260B	Total/NA
4-Methyl-2-pentanone (MIBK)	0.98	J	5.0	0.98	ug/L	1		8260B	Total/NA
Acetone	25		10	1.9	ug/L	1		8260B	Total/NA
Benzene	0.24	J	1.0	0.16	ug/L	1		8260B	Total/NA
Chlorobenzene	0.49	J	1.0	0.17	ug/L	1		8260B	Total/NA
Toluene	0.17	J	1.0	0.17	ug/L	1		8260B	Total/NA

### Client Sample ID: MW-3

Lab Sample ID: 280-99137-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Acetone	28		10	1.9	ug/L	1		8260B	Total/NA
Toluene	0.17	J	1.0	0.17	ug/L	1		8260B	Total/NA
Trichloroethene	0.33	J	1.0	0.16	ug/L	1		8260B	Total/NA

### Client Sample ID: MW-12

Lab Sample ID: 280-99137-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
1,1-Dichloroethane	8.2		2.0	0.44	ug/L	2		8260B	Total/NA
1,1-Dichloroethene	0.51	J	2.0	0.46	ug/L	2		8260B	Total/NA
1,2,4-Trimethylbenzene	1.8	J	2.0	0.30	ug/L	2		8260B	Total/NA
1,2-Dichloroethene, Total	7.9		2.0	0.48	ug/L	2		8260B	Total/NA
1,3,5-Trimethylbenzene	0.63	J	2.0	0.32	ug/L	2		8260B	Total/NA
1,4-Dichlorobenzene	1.3	J	2.0	0.32	ug/L	2		8260B	Total/NA
4-Isopropyltoluene	0.68	J	2.0	0.40	ug/L	2		8260B	Total/NA
Acetone	23		20	3.8	ug/L	2		8260B	Total/NA
Benzene	1.8	J	2.0	0.32	ug/L	2		8260B	Total/NA
cis-1,2-Dichloroethene	7.9		2.0	0.30	ug/L	2		8260B	Total/NA
Ethylbenzene	2.0		2.0	0.32	ug/L	2		8260B	Total/NA

This Detection Summary does not include radiochemical test results.

TestAmerica Denver